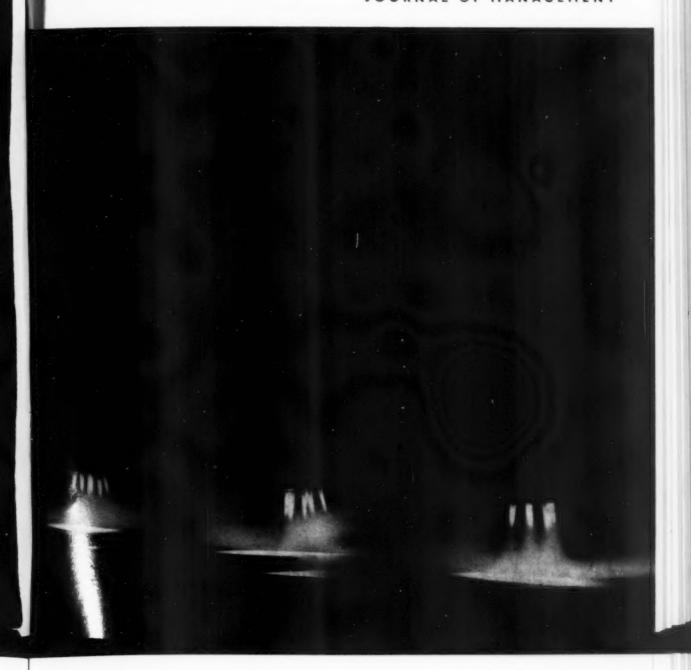
- Quicker, Safer Exports to Europe 66
- Home-made Films Show Workers How 72
 How to Eliminate Stock Errors 80
- Better Control by Mobile Radio 70 Impact Extrusion Does 100 Jobs 76
- Employees' Ideas Slash Prices 91

BUSINESS





THE TELEGRAPH CONDENSER CO. LTD.

case for power factor correction, will gladly be sent on request.

INDUSTRIAL DIVISION: NORTH ACTON . LONDON W.3 . Tel: ACOrn 0061

BUSINESS

JOURNAL OF MANAGEMENT

Economic Prospect

AT-A-GLANCE FORECAST 3
STATE OF THE NATION 5
HOME MARKET SURVEY N. Ireland 11
EXPORT MARKET SURVEY Pakistan 17

Better Freight Services to Europe 66

How to get your goods there faster, safer by William Guthrie

Mobile Radio Gives Tighter Vehicle Control 70

Customer service improved, with lower mileage by George T. Rae

Home-made Films Show Workers How 72

Look-and-learn system speeds up training by Peter Spooner

Impact Extrusion Saves Machining 76 Science Prospect Feature New technique for long or short-run work

Selling to Poland — the Prospects 79

A British firm learned a lot at the Poznan Fair by Paul Steel

Stock Control With No Mistakes 80

One accounting machine keeps track of 7,000 items by Peter Lewis

Boost Sales by Studying Habits 89

Retailers, rivals and governments all follow discernible patterns by W. I. Sibbald

Employees' Ideas Slashed Prices 91

From round-the-table talks one firm got many benefits by Philip Marchand

A Quarter of a Million Copies 94

A rush job proved the speed of a two-machine reproduction system by W. Ellis

Complete Market Surveys in Half the Time 98

Sixth in a series of articles for export sales executives by W. R. Mills

Consultants Increase Canteen Efficiency 100

A convenient and economical solution to supervision problems by George Hamilton

Annuities for Small-Firm Executives 124

New scheme for retirement benefits by A. R. Ilersic

MARCH OF BUSINESS 21
PEOPLE, PRODUCTS, PLACES 25
LETTERS 65
MANAGEMENT AT WORK 85
BOOKSHELF 96

New Equipment

OFFICE 105 WORKS 111 CANTEEN 114

Change of subscriber's address: Please notify Publishers six weeks before change of address is to take effect, giving present address in full and new address. BUSINESS, Vol. 88, No. 9. Published monthly by Business Publications Ltd., registered office, 180 Fleet Street, London, E.C.A (Waterloo 3388). 45/- a year post free U.K. and overseas. Advertisement, editorial and sales offices: Mercury House, 109-119 Waterloo Road, London, S.E.I (Waterloo 3388)

COVER PICTURE

Federation

Jets of flame 'heat dimple' (anneal) steel sheet as it

passes on a conveyor at the Sheffield works of Samuel Fox and Co. Ltd.

Photo by courtesy of the

British Iron and Steel

Classified Guide to Equipment 130 Alphabetical List of Advertisers 132

*F.O.C.
Approved

an entirely

new

Automatic FIRE ALARM SYSTEM

to protect your property and profits!

GENTS

1151

Automatic Fire Alarm System The ever-increasing cost and frequency of disastrous fires in Industrial and Commercial buildings makes a reliable Fire Alarm system increasingly imperative. The new Gents' 1151 Automatic Fire Alarm system has been specially designed to give **immediate** warning of the **start** of a fire by the use of Automatic Fire Detectors installed in the building which give early positive warning, and by a direct link to the Fire Station ensures immediate action.

Installation costs are reduced and by having the approval of the Fire Offices' Committee* the system can be specified with complete confidence. Buildings in which this system is installed may be granted valuable insurance rebates. Our technical advice is available to help you or your Architect to plan an efficient system for your building. For preliminary information on this new Automatic Fire Alarm system write for our leaflet No. 300.

*Approved by the Fire Offices' Committee—an assurance of an extremely high standard of performance and efficiency.

GENT AND COMPANY LIMITED . FARADAY WORKS . LEICESTER

London Office and Showroom: 47 Victoria Street, S.W.1

Also at: BELFAST . BIRMINGHAM . BRISTOL . EDINBURGH . GLASGOW . NEWCASTLE

ECONOMIC PROSPECT

Survey and Forecast of Business Conditions

Trade revival coming

- ▶ There are some hopes for production and trade moving out of the recent stagnation. Two reasons: First, the reduction of Bank Rate from 5 to 4½ per cent on August 14—the first downward movement in August for 33 years—is evidence of the Government's confidence in sterling at a time of seasonal pressure.
- ▶ Second is the start of an upturn in the U.S. economy. Rise of the U.S. production index from 126 in April to 130 in June represents an advance on a broad front.
- ** Keynote of the economy recently has been stability, despite the unsettling events in the Middle East. The gold reserves continue to rise, whilst the trade gap has again fallen, after the dock strike setback.
- Private commercial building continues at a steady level. This will in time contribute substantially to overall productivity.

Some retail soft spots

- ▶ General wage stability after the round of awards earlier this year, combined with renewed customer preference for durable goods, may bring a modest reduction in general retail business this Autumn. But this trend will be slightly offset by cuts in the price of some branded goods.
- Dutput of motors, heavy electrical equipment and some other specialized capital goods continues at a high level. U.K. paper production during the second quarter of this year was 2 per cent higher than a year earlier. But a recent survey showed that engineering and chemical firms generally can, with existing equipment, increase their output by at least 20 per cent.
- β Although total exports in the first seven months of this year were 4 per cent down on last year, exports to America increased by $4\frac{1}{2}$ per cent, with road vehicles and aircraft in the lead.
- ▶ Exports of petroleum products have shown a marked upward trend, whilst exports of agricultural machinery and tractors this year are expected to reach £100 million —£12 million more than in 1957.
- ▶ The generally bright prospects for overseas trade should be enhanced by the recent lifting of trade embargoes with the Communist bloc.

Overseas prospects better

THIS MAN

... is worth £60,000

His employers will tell you that Bob West is worth every penny of that £60,000. Why? Because, single handed he put out a fire that, if allowed to spread, could have destroyed the whole plant.

Bob discovered the fire . . . extinguished it instantaneously . . . and was back at his job in 5 minutes. Modestly, he gives most of the credit to Nu-Swift—and Bob is right.

Every Nu-Swift extinguisher is designed to fulfil a specific function in a complete system of fire protection. There is a Nu-Swift extinguisher for every risk and every extinguisher is operated in the upright commonsense way. That is why industry and commerce in 70 countries rely on the easy-to-handle, certain-to-operate Nu-Swift extinguishers.

Delay or inefficiency in the operation of your extinguishers could spell disaster. You would be wise to request Nu-Swift to check your present fire fighting equipment. The report will be unbiased ...it won't cost you a penny...and could save you a fortune. Get in touch with Nu-Swift today.

you can rely on
NU-SWIFT



For the attention of Mr.

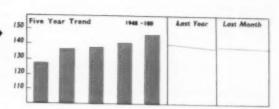
IN THE SOUTH to Nu-Swift Ltd. (Dept. 25 Piecadilly, W.1. REGent

STATE OF THE NATION

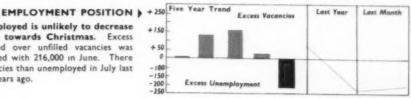
• Five key indicators to the State of the Nation, followed by 18 indicators to the main economic influences.

INDUSTRIAL PRODUCTION

The recent decline in output is unlikely to be made good before the end of the year. June provisional index is 137-8 compared with 138 in May and 140 in June, 1957. Allowing for holidays and other seasonal factors, production is 5 per cent down on a year ago. Moreover, for the previous 12 months it was stagnant.

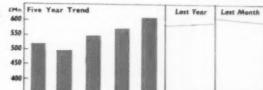


The number of unemployed is unlikely to decrease further. It may rise towards Christmas. Excess numbers of unemployed over unfilled vacancies was 197,000 in July, compared with 216,000 in June. There were 88,000 more vacancies than unemployed in July last year, and 163,000 four years ago.



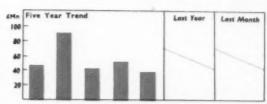
MONEY FLOW

Average daily bank clearings show that business money is maintaining a steady flow. July daily average was £592 million compared with £604 million in June, £586 million in May, and £587 million in June last year. Four years ago the figure was £539 million.



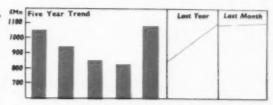
TRADE GAP

Gap between imports and exports has decreased considerably following recovery from the dock strike. July excess of imports over exports was £37.7 million compared with £68.5 million in June and £64 million in May (both freak months), and £68.8 million in July last year. Four years ago the figure was £33.5 million.



GOLD AND DOLLAR RESERVES &

The sterling area's gold and dollar reserves continue their satisfactory upward trend. Despite Middle East uncertainties and seasonal pressure, July holdings rose to £1,101 million from £1,099 million in June. A year earlier reserves stood at £845 million, and four years earlier at £1,076 million.



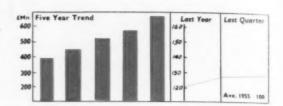
- KEY TO THE CHARTS. Bar charts show the 'Five Year Trend,' taking for each year the average monthly value during the most recent three months. Graph lines for 'The Last Year' compare the most recent month with the same month a year ago. Graph lines for 'Last Month' compare the most recent month with the previous month.
- READERS ENQUIRIES. Spot enquiries by letter or telephone, involving no research, are answered free. More detailed enquiries will be charged for at cost, on the basis of professional staff time absorbed. This applies to both general management and economic enquiries.

MAIN ECONOMIC INFLUENCES on the STATE OF THE NATION

1. Trends in CAPITAL SPENDING

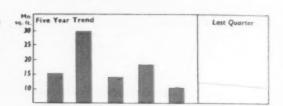
INDUSTRIAL INVESTMENT PLANS

The further cut in Bank Rate will encourage firms to continue with their investment plans, as originally scheduled. There have been some postponements but total investment this year is likely to match the record level last year.



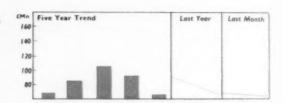
FACTORY BUILDING APPROVALS

There are hopes for a rise in factory building approvals by mid-1959, despite the recent continued fall. In the second quarter of 1958 a total area of 10.9 million sq. ft. was approved—about 8 per cent less than the first quarter, 44 per cent less than a year earlier and 29½ per cent less than four years earlier.



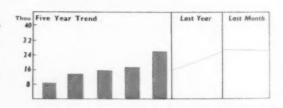
MACHINE TOOL ORDERS >

Machine tool orders continue to decline, orders now in hand representing nearly ten months' work. The latest available figure is for May, showing £67.1 million orders outstanding—£1.4 million less than a month earlier and £24.4 million less than a year earlier, when orders in hand also represented 10 months' work.



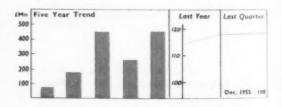
INDUSTRIAL HIRE PURCHASE

Industrial hire purchase fell in June to a low level but there has been some recovery and there are prospects of a further rise. The B. of T. provisional index for industrial plant and equipment in June was 93, against 120 in May and 100 last July. June H.P. sales of new cars and commercial vehicles totalled 27,000, against 28,000 in May, 18,000 a year earlier, and 9,000 four years ago.



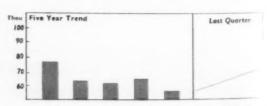
MATERIAL STOCKS

Manufacturers' stocks rose in value by only 1 per cent in the first quarter of 1958 due to a $3\frac{1}{2}$ per cent fall in the value of materials and fuel. Stocks of industrial materials held outside manufacturing industries fell by 11 per cent during the same period. A seasonal rise may be expected later.



HOME BUILDING STARTS

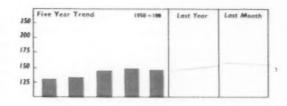
Home building starts continue at a reduced level, when allowance is made for seasonal factors. Number of houses started in the second quarter of this year was 74,219, against 80,817 a year earlier and 100,765 four years earlier.



2. Trends in CONSUMER SPENDING

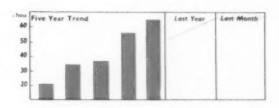
RETAIL SALES

Retail sales are likely to be slow for some time, due partly to increased expenditure on motor vehicles, housing, fuel and light. June index for all kinds of business was 153, against 154 in May, 151 a year earlier and 129 four years earlier.



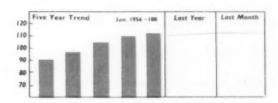
DOMESTIC HIRE PURCHASE

Domestic hire purchase continues fairly steady and should be a mild stimulus to Autumn business. B. of T. provisional index for June was 93, against 96 in May and 82 last year. In June 66,518 used cars were sold on H.P. contract, compared with 64,542 in May, 51,325 a year earlier and 26,884 four years earlier.



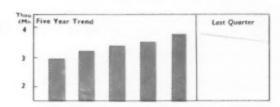
WAGE RATES

Wage rates continue to rise, but slowly compared with recent years. Index for June was 113.4, compared with 112.9 in May, 112.7 in April, 111 a year ago and 91 four years ago.



PERSONAL EXPENDITURE

Personal expenditure has decreased slightly of late but is likely to stabilize. Total expenditure for the first quarter of 1958 was £3.461 million, compared with £3.823 million for the last quarter of 1957 and £3.220 million four years earlier.



3. Trends in PUBLIC SPENDING

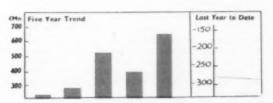
PAYMENTS FROM EXCHEQUER

So far this financial year expenditure is slightly higher than a year earlier. The current figure of £1,575 million is about £56 million above a year earlier. There is no reason why total expenditure should not keep within the current year's budget estimate of £5,071 million.



EXCHEQUER DEFICIT >

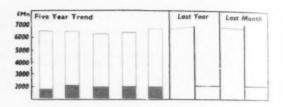
Exchequer deficit to date this financial year is only about £3 million less than a year earlier. This represents an improvement of £63 million over the previous month's return and bodes well for achievement of the £400 million budget surplus.



4. Trends in CREDIT POLICY

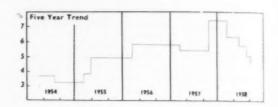
BANK DEPOSITS AND ADVANCES

Bank deposits have recently continued their rise, whilst advances have fallen. Total deposits at the end of July were £6,671 million, compared with £6,669 in June and £6,501 million in July last year. Advances this July were £1,997 million, compared with £2,030 million in June and £1,992 million a year earlier.



BANK RATE

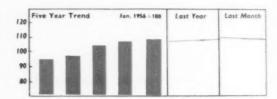
The current stability of sterling may lead to further reductions in Bank Rate. The most recent cut was from 5 to $4\frac{1}{2}$ per cent on August 14. Reduction, at a time when pressure on sterling is seasonally rising, is encouraging. The chart depicts changes over the last five years.



5. Trends in MARKET PRICES

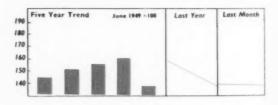
RETAIL PRICES

Retail prices have been steady or falling for some months and may actually be further reduced. July index was 108.5, or 1.7 below June, and only 1.9 above a year earlier, but 13.5 above four years earlier. The slight reduction in July was due mainly to reduction in the cost of potatoes and other vegetables, fresh fruit and meat. Anticipated price cuts for packaged goods should reinforce the trend.



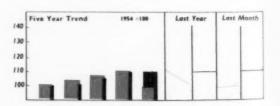
RAW MATERIAL PRICES

The fall in raw material prices may have ended. July index was 137.1 compared to 137.7 for June, 154.8 a year earlier and 143.7 four years earlier.



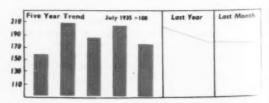
TERMS OF TRADE

Terms of trade are likely to remain favourable. Import price index for July was 98, a fall of 1 point on June and a fall of 10 points on a year earlier. June export price index remained at 110 for the fifth successive month, and was 1 point below the year earlier.



SHARE PRICES

Share prices show signs of improving as Bank Rate falls, despite political and economic uncertainties. At the time of going to press, the Financial Times index of industrial ordinary shares is around 185, or 9 points above the June average but 14 points below a year earlier.





a pension fable

All through the summer the grasshoppers danced and sang and generally lived it up. September found their leader addressing a mass rally.

"Widespread unemployment among grasshoppers", he proclaimed, "has been caused by unpatriotic hoarding on the part of ants who have failed to spend up to the limit of their incomes. Are we to tolerate two nations in old age: those who have been able to save and those who have not?"

As the ants were too busy working to organise any effective opposition, a state pension scheme covering the whole insect community was rapidly introduced, giving fair shares for all. All through that winter the grasshoppers had never had it so good. Unfortunately, the following summer the ants decided to dance and sing and live it up like the rest, and the winter that followed was the worst in grasshopper memory.

Occupational pension schemes already cover one half of all employed men. Prompt action now by employers of the remainder can remove any excuse for state intervention. The advice of this country's leading pension scheme consultants can be obtained, without charge or obligation, by returning this advertisement, with your card attached, to the address shown below.

The Noble Loundes Pension Service

38 LOWNDES STREET

LONDON S.W.I TELEPHONE: SLOANE 3465 (15 LINES)

Branches and Associated Companies at Home and Overseas BRITISH ISLES Belfast, Birmingham, Bristol, Cardiff, Dublin, Glasgow, Hull, Leeds, Liverpool, Manchester, Middlesbrough, Newcastle upon Tyne, Nottingham, Romford and Sheffield.

OYERSEAS Auckland, Bulawayo, Capetown, Durban, Johannesburg, Melbourne, Nairobi, Salisbury, Sydney and Wellington.

Also represented throughout Canada and the United States of America.



TAPE IT

The Stenorette is produced by the world's largest manufacturers of tape recording instruments. Designed to meet the pace of modern business, it has all the features anyone could want in a dictating machine at a fraction of the cost.

FROM HERE

The Stenorette takes 25 minutes dictation for each spool of tape. It has instantaneous play-back, automatic erase and back-space facilities, will record conferences, memos or incoming telephone calls and provide clear, balanced reproduction for transcription.



Average cost

53½ gns

(including the basic accessories)

GRUNDIG

More than 200,000 now in daily se

GRUNDIG (Gt. Britain) LTD Advertising & Showrooms: 39/41 NEW OXFORD STREET, LONDON, W ...

GS 86b

Trade Enquiries to: NEWLANDS PARK, SYDENHAM, LONDON, S.E. 26 (Electronics Division, Gas Purification & Chemical Company Limit)

HOME MARKET SURVEY

A Round Britain Survey: Regional Notes on Markets and Industrial Developments

NORTHERN IRELAND

ORTHERN Ireland's insured labour force is 476,000, and is expected to reach 491,000 by 1967. Ten per cent of it is currently unemployed, and during the past ten years the percentage of unemployed has not dropped below 4.9. Since the war, the government of the province have tried to deal with this state of affairs by encouraging the expansion of existing industries and the development of new ones.

Earlier this year, they announced new measures to reduce the number of unemployed. These hinge on a five-point plan:

1-To increase the total subsidy per house by a further £5 to over £60.

2—For the Ministry of Agriculture to employ 400 men and spend £60,000 on making new roads and thinning forest trees.

3—To spend a further £100,000 and employ a further 400 men for five months on clearing main water courses.

4—To place contracts for new 'advance' factory building costing £2 million.

5—To increase the aid offered to new industries, where appropriate, from 25 per cent to 33½ per cent.

Lord Glentorran, Minister of Commerce, explained last May that the building of 'advance' factories (buildings erected without any particular tenant in view) remained the key inducement for new industries in the province. The total cost of the 40 projects now under way or planned will probably exceed £7,800,000.



In 1957, the record sum of £3,822,000 was spent on factories. More are to be built at Dunmurry and Carnmoney (Belfast suburbs) and at Portadown. Factories that have not been allocated represent an investment of about £2 million.

In view of Britain's general labour shortage since the war, it is surprising that more British firms have not developed in Ulster, especially when the government of the province have offered generous grants and subsidies to both existing and new concerns. American firms, on the other hand, have been quick to realize Ulster's potential and accept the aid offered.

Firms already established in Northern Ireland comment favourably on the keenness and 'trainability' of labour, on the general willingness to work shifts, and on the very low rate of turnover and absenteeism. There is adequate housing for both workers and executives, whilst the Northern Ireland Ministry of Labour helps to train workpeople. No newcomer need worry about lack of room for development; and the available sites are within easy reach of the ports by congestion-free roads. Power and water are abundant.

Experience has shown that the companies likely to fare particularly well in the province are those where transport costs are low in relation to the value of their products. Specific industries which have established themselves since the end of the war are those manufacturing machine tools; mechanical and electronic tabulating machines; computers; automatic control systems; gramophone, wireless and television equipment; drawing instruments; oil-well equipment; and the larger turbines for power stations.



Cables. Three firms—the Warren Wire Company of New Jersey and their associate companies, the Wandleside Cable Works of Wandsworth, London, and Irish Cables, have combined to form a new company—Wandleside Warren Wire—to operate a new factory. The Warren Wire Company will hold 51 per cent of the initial capital, the other 49 per cent being held by Falk Stadelmann and Co. The factory, first to be built at the new Government industrial estate at Dummurry, will have a production area of 70,000 sq. ft., and will cost, together with its equipment, about £420,000. About 500 people will be employed on turning out 10,000 tons of cable per annum.

Plastic cables. Belfast Cables—a new subsidiary company of Reliance—Clifton Cables and Industrial Products, of Leyton, London, started manufacturing plastic-covered cables last spring on the Carnmoney Estate, near Belfast. The new factory, covering 32,000 sq. ft., will later produce an extended range of products.

Aluminium containers. The first factory on the Carnmoney Estate, taken over by Light Alloy Construction (a wholly-owned subsidiary of Summerson Holdings, Darlington) is already in production. The company manufacture aluminium freight containers and hope to





Even at the drawing board stage it is advisable to call in Constructors and obtain the benefit of their long and practical experience. Constructors steel partitioning is planned to ensure ease of installation and afterwards can be re-arranged with the minimum of inconvenience to suit changing requirements. Concealed wiring facilities, and flush switches are amongst the exclusive Constructors features that go far to achieve perfection in the designing of a well planned installation.

GOOD PLANNERS ALWAYS CONSULT

CONSTRUCTORS

FOR FACTORY EQUIPMENT & OFFICE FURNITURE

CONSTRUCTORS GROUP. Dept. T, Tyburn Road, Erdington, Birmingham, 24. Telephone: ERDington 1616 London Office: 98 Park Lane, W.1. Telephone: MAYfair 3074 Leeds Office: 25 Merrion Street. Telephone: Leeds 28017 develop a big market in Canada and the United States. Aircraft industry's future. Concern regarding the future of Belfast's aircraft industry has been caused by fresh redundancies at Short Brothers and Harland. Following a reduction of several hundred in the number of workers during the past few months, a further 1,100 are expected to become redundant before the end of the year. There is some hope, however, that alternative work will be found fairly soon, thus reducing this figure. The Ministry of Supply's decision to halve its order for Canberras earlier this year lost the firm about £6 million.

Mechanical handling. Diversification is helping Short Bros. to overcome their difficulties. Recently, for example, they acquired control of an English company marketing straddle carrier equipment which is particularly suitable for rail, road, dock and airport freight. Production is to be centred at Newtownards.

Ejection seats. Negotiations between Martin-Baker Aircraft and the Air Ministry for the purchase of Ballyhobert Aerodrome, County Down, have reached an advanced stage. Martin-Baker, if successful, plan to build a new factory there to augment production of aircraft ejection seats at their Denham, Bucks, factory. The new factory would be designed to permit further extension.

B.T.M. extensions. The British Tabulating Machine Company have completed the first of two extensions to their Castlereagh (Belfast) factory. The second extension should be completed by the end of 1958.

Gauges. The firm of Tolimit Gauges are taking over a government-built factory of 25,000 sq.ft. at the Dunmurry Estate, near Belfast. When the factory is completed, the company will transfer their entire production of precision gauges and automation equipment from their factory at Fulham, London.

Batteries. The Ulster Battery Company are installing modern machinery in a 5,000 sq.ft. factory on the Carnmoney Estate, near Belfast, for the manufacture of car batteries.

Synthetic fibre. The end of this year should see production of Acrilan acrylic fibre at the £3½ million plant being built at Coleraine by Chemstrand.

I.C.I. plant. Imperial Chemicals intend to establish in Northern Ireland a plant for spinning Terylene polyster fibre. With the site not yet decided, the plant will take several years to complete, but production should begin by 1963-64. A labour force of up to 2,000 will be needed.

Textiles. Ira Ickringhill and Co. Ltd., of Bradford, are building an £85,000 factory at Armagh.

Industrial gases. F. H. Smedley and Partners, London, are to build a hydrogen and oxygen plant in Belfast. When in full production, it will employ about 80 people



ECONOMIC PROSPECT

mean more sales at less cost . .

Over 2.500 Salesmen and Sales Executives attend TACK Courses each year. They are sent by their firms because TACK sales training produces results. Regardless of product or service, these firms have proved for themselves that TACK Personal Courses contribute positively towards greater sales at lower cost! Read what these top businessmen-just two out of the hundreds of companies who use TACK Courses-have to say . . .

. . whatever the product or service !

F. B. Roberts, Grocery Marketing Manager of the Nestle Company Ltd. -- famous producer of quality-food products has this to say:



"For five years we have used the TACK Course to augment our own sales training programme. Their commonsense training is considered most suitable for a company which depends upon repeat business.

From Smiths Clocks & Watches Ltd.-renowned manufacturers of horological products, this statement by Market ing Manager, L. J. H

"Our representatives attended your course just over a year ago. year was an excellent one for this Company, there is no doubt that the refreshing and invigorating ideas you gave us played an important part.

Please write for details of how we can help your Company too!

- * TACK Course in Salesmanship and Human Relations-3 days.
- * TACK Course in Sales Management-2 days.

THE TACK ORGANISATION 1-5 LONGMOORE STREET, LONDON, S.W.I. VIC 5001-4

and be capable of supplying all the hydrogen and oxygen used by industry in Belfast and the surrounding area. Fuel oil. Esso are spending £300,000 on extensions to their storage and distribution centre in Belfast. With a final capacity of 71 million gallons, it will be the largest and most modern fuel oil installation in Northern Ireland. Six new storage tanks are being built on a 10-acre site in Belfast Harbour-two of 8,000 tons capacity each, two of 2,000 tons and two of 900 tons. Chemicals. Carbide Industries Ltd., a subsidiary of British Oxygen, are erecting a large factory at Mavdown, County Londonderry.

Synthetic rubber. The £6 million Du Pont neoprene synthetic rubber plant at Maydown, Londonderry, is expected to begin production early in 1960, providing employment for between 600 and 1,000 local workers. Chipboard. The Northern Ireland Government and the Industrial Finance and Investment Corporation of London have negotiated the formation of a new company to manufacture chipboard at Castleroe, Coleraine. The government will provide a factory of 19,000 sq. ft. which should employ about 80 men within two years. The new factory will use softwood thinnings taken from Ministry of Agriculture and private plantations.

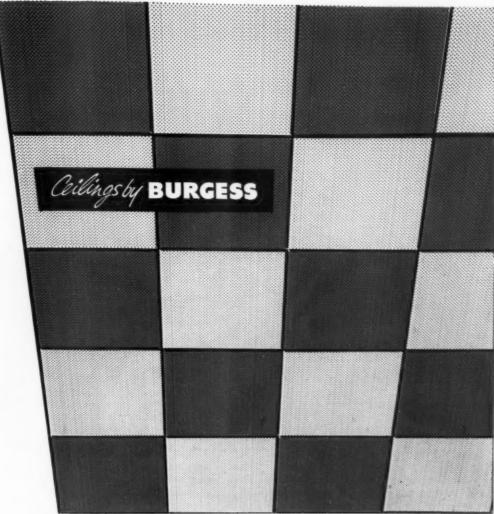
Knitwear. Supak, of Perivale, Middlesex, manufacturers of woollen berets, hoods, and other knitwear (which acquired Berets Industries and its subsidiary, the Cookstown Weaving Company, in 1957) are to expand production at their Cookstown factory. More than 90 workers are employed at present, and in two years' time the figure is expected to be 150. The plant will be the largest beret production unit in Europe and 80 per cent of its output is to be exported.

Paper. The board of the National Board and Paper Mills of Granagh, Waterford, has been reconstituted to include four American directors out of a total of seven. As a result of this reorganization, the St. Joe Paper Mill, of Jacksonville, Florida (a subsidiary of the Alfred I. Du Pont Estate) will assist in the reequipment of the Irish mills and in the expansion of production. Equipment worth £70,000 has already been installed.

Harbour improvements. The Queen Mother opened Sinclair Wharf last May, as a further stage in the development of Belfast Harbour. Part of a £41 million scheme, the 1,240ft. long wharf and 1,120ft. transit shed will allow bigger merchant ships to berth at

Roads. A 700ft., 10-span viaduct to carry a dual carriageway over the Belfast-Bangor railway line and G.N.R. sidings at Ballymarrett is to be included in the Sydenham by-pass.

A road bridge costing £90,000 is to be built at Dunmurry to carry the South Approach Road over the Belfast-Lisburn Road.





"They're certainly attractive. Are they effective?"

Selective sound control with BURGESS acoustic tiles

BURGESS PRODUCTS CO. LTD.

Acoustical Division, Hinckley, Leicestershire.

SEPTEMBER, 1958

[&]quot;Yes, Burgess Acoustic Tiles have high sound absorption coefficients."

[&]quot;What about sizes, colours, and so on?"

[&]quot;12 inch and 24 inch squares, 9 inch by 24 inch and 12 inch by 24 inch rectangles-patterned if you like. They're electrostatically spray-painted and stoved in a standard off-white finish, but can be supplied in any of a 101 B.S.S. shades."

[&]quot;Will they last ?"

[&]quot;—as long as the building! That's zinc-coated mild steel sheet up there."

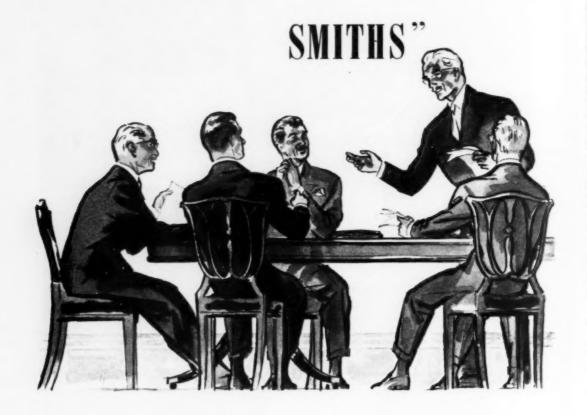
[&]quot;Any other features?"

[&]quot;Plenty: they're fire-resistant, simple and quick to install or remove, and easy to clean."

[&]quot;Expensive?"

[&]quot;No, these are Burgess Tiles remember. You'd be surprised how reasonable they are, and their high thermal value can effect a fuel saving of 25 per cent!"

"I'll tell you who could help...



A high grade watch making industry must work to the finest limits possible in engineering, and in Great Britain today Smiths Cheltenham factory is not only engaged in making complete men's and ladies' watches, but jewels, hairsprings, and other components to limits as fine as .0002 of an inch.

The world's watch industries have always been placed at the disposal of firms who lack facilities for manufacturing minute mechanisms, but it is only of recent years that a high grade watch industry has become firmly established in this country. Now, whatever your requirements, providing they are complementary to watch making, Smiths may be able to help you. Any enquiries should be sent in confidence to the Director and General Manager.

SMITHS CLOCK & WATCH DIVISION

Sectric House, Waterloo Road, London, N.W.1

EXPORT MARKET SURVEY

A Round-the-World Survey: Country by Country

PAKISTAN

Pakistan's population numbers nearly 85 million and is exceeded by those of only five other countries—China, India, the U.S.S.R., the U.S. and Japan. The country comprises a total area of 365,000 square miles, and is divided into two parts—West Pakistan and East Pakistan—separated by 1,100 miles of Indian territory. East Pakistan comprises about one-sixth of the total area, but contains over one-half of the population.

Agriculture is the basis of the economy of underdeveloped countries and this applies also to Pakistan, where it engages 75 per cent of the total active population. Small-scale cottage industries (mainly textiles, leather and metal work) are spread over the country and supplement the income of the rural population; but partition left Pakistan with few modern industries.

The need for development was quickly recognized by the government of the new country. It was clear that agriculture would remain the country's greatest economic asset, but it was felt necessary to build on its foundation a semi-industrialized economy in order to raise the standard of living and to make the best use of the domestic output of agricultural materials. (For instance, at the time of partition Pakistan had no jute mills, only 17 small cotton mills, and no woollen mills).



Comprehensive planning started in 1950 when Pakistan joined the Colombo plan. A development programme was prepared, covering the six years from the middle of 1951 to the middle of 1957. This plan was hurriedly put together and its details were not adhered to, though development expenditure followed its general lines. In 1956, a draft five-year plan (1955-1960) was issued, whose final form was published last May.

The revised plan provides for a total development expenditure of Rs. 10,800 million against Rs. 11,600 million envisaged in the draft plan, the main reason for the reduction being delayed implementation of the draft plan. Expenditure in the public sector is estimated at Rs. 7,800 million; of this total, agriculture accounts for 16 per cent, water and power for 29 per cent, transport for 18 per cent, industry (including foods and

minerals) for 17 per cent, and housing, education and welfare services for the remainder. Expenditure in the private sector is expected to be Rs. 3,300 million, of which Rs. 1,400 million would be devoted to industry.

It is now expected that by the end of 1959 (which will now be the end of the plan, since the financial year will by then coincide with the calendar year) 86 per cent of the planned investment will be carried out. The plan assumes that over the five-year period the national income (in real terms) will rise by 15 per cent (in view of an estimated population growth of 7.5 per cent) and per capita income by about 7 per cent.



The Government encourages private investment and welcomes foreign capital. U.K. private investment was traditionally in tea plantations, and industrial investment started only after Pakistan became independent. A few industries (communications, arms, water power, manufacture of telephone, telegraph and wireless equipment) are owned and operated by the state. The Governmentcontrolled Pakistan Industrial Development Corporation is charged with the promotion of the development of certain key industries: jute, paper, heavy engineering, shipbuilding, heavy chemicals, fertilizers, sugar, cement, textiles, chemicals, pharmaceuticals and dyestuffs, and natural gas. The Corporation may itself establish industries or assist private projects. When successfully in operation, the projects will be gradually transferred to private ownership. So far, the Corporation has initiated 59 projects, of which 36 are completed.

Pakistan's imports are subject to non-discriminatory restriction by global quotas. In spite of the bias towards industrialization, there is a certain shortage of materials and equipment because the quotas are relatively small.

The U.K. has remained Pakistan's largest customer and supplier. In 1957, Pakistan's exports totalled Rs. 1,604 million, of which 16 per cent went to the U.K., and its imports Rs. 2,089 million, of which nearly 20 per cent came from the U.K. According to the U.K. returns, U.K. imports from Pakistan were £22.8 million in 1956 and £25.7 million in 1957. U.K. exports to Pakistan were £32.6 million in 1958, U.K. exports to 1957. In the first half of 1958, U.K. exports to



A kick of inspiration that comes to those who work in really well-planned offices? Or a smart crack across the shins-because you forgot to sit the special, twisted way in that desk? If all's not well, ring Catesbys Contracts at Museum 7777 (a letter, if you're abroad). They'll put things right - make the office the right shape, decorate it, put a new carpet here, more chairs there, and replace that desk with a new one that's almost a second secretary. Time and cost? Quick and low! You'll soon make both up in that spanking new office, where work's a pleasure and profits are, somehow, easier to coax.



Interior building and furnishing by

Catesbys

CATESBYS CONTRACTS AND EXPORT LIMITED

TOTTENHAM COURT ROAD, LONDON, W.1. MUSEUM 7777

Pakistan were £14 million, against £16.9 million in the first half of 1957 and £14.7 million in the first half of 1956.

In a country like Pakistan the main opportunities for U.K. exporters are naturally in the field of capital goods. Import restrictions are severe for consumer goods; also the scope for such imported goods is becoming more limited through the development of domestic industry (e.g. textiles). In fact, an analysis of the U.K. trade statistics shows that, outside capital goods and engineering products, only two groups of goods played an important part among our exports to Pakistan: chemicals (£3,820,000 in 1957) and wooltops (£1,474,000). Drugs accounted for £1,286,000 of the exports of chemicals.



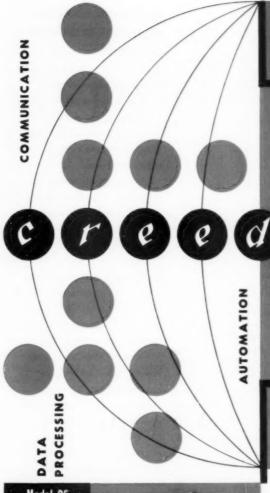
Machinery (non-electric) accounted for £9,244,000. Textile machinery, which is not manufactured in Pakistan, finds a good market; the U.K. supplied £2 million worth of it. Excavating and earth-moving machinery, internal combustion engines, industrial trucks and mechanical handling equipment, pumps, machine tools and boilers are other important fields, in which British exporters are seizing opportunities.

Electric machinery accounted for £3,719,000 of our exports. The expansion of electricity generation affords a market for generators and converting machinery and cables. U.K. supplies also contribute to the extension of Pakistan's telegraph and telephone system, and to the development of broadcasting.

Iron and steel accounted for £3,566,000 last year, and metal manufactures for £2,279,000. Among iron and steel, railway and tramway construction material and tubes are the most important groups. The modernization of Pakistan's railways is being assisted by the import of British vehicles (£1,872,000). British exports of road vehicles and aircraft to Pakistan totalled £2,298 million last year (cars £376,000; commercial vehicles £324,000; chassis £681,000; aeroplanes £225,000).



In spite of the difficulties which face Pakistan like other primary producing countries, development is carried forward and U.K. exporters do well to watch opportunities and tenders for new projects. They should note that in June a new Ministry of Supply was formed which is taking over the purchasing functions hitherto carried out by Embassies and High Commissioners—mainly for defence stores, railway stores, post and telegraph stores, and general engineering. For exporters of these goods it would be now advisable to appoint agents in Pakistan.



Teleprinters and **Punched Tape**

TELEPRINTERS

Equipment

- TAPE PUNCHES
- READERS
- COMPARATORS
- VERIFIERS
- REPRODUCERS
- INTERPRETERS

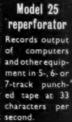
Creed & Company Limited

TELEGRAPH HOUSE . CROYDON . SURREY





Post coupon for complete information





18800	00,000				
		_	2		
	400	The second	D	O	À.
-	09:04		E III		
	0			- 00	

Please send me without obligation a copy of your new 52-page illustrated Bulletin "An Introduction to Creed Teleprinters and Punched Tape Equipment"

Name

Position

Address

SBB

FULL NARRATIVE DESCRIPTION AND AUTOMATIC ACCOUNTING IN ONE OPERATION

Here is an entirely new typing accounting machine—the Burroughs Typing Sensimatic, providing increased office productivity over a wide variety of accounting work for all types of business.

Automatic features simplify the operation of the machine and up-to-date Management reports are provided as a by-product of routine accounting applications.

The Burroughs Typing Sensimatic has unmatched flexibility. The control unit permits each job to be individually programmed and four or more programmes may be incorporated in ONE unit.

The type keyboard follows the standard alpha arrangement and has a natural slope with 42 keys scientifically placed for speed and ease of operation.

The writing unit itself is a removable box printer, two inches

containing 84 characters.
SENSIMATIC

wide by one inch high,

Contact your local Burroughs office or write direct to: Burroughs Adding Machine Ltd.,





NEW BURROUGHS TYPING

MARCH OF BUSINESS

Differentials for clerks are narrowing

Largely due to the shortage of boys entering offices, the salaries for young office workers rose up to 27 per cent between 1956 and 1958. Salaries of clerks on routine work rose more than those doing responsible work.

This narrowing of differentials is one of the points brought out in a report by the Office Management Association on the salaries of clerical workers. The salaries of 90,000 clerks employed in 100 establishments were analysed.

Increases for adult clerks were mostly between 11 and 16 per cent, or about twice the increase in the cost of living (7 per cent) since 1956. The average increase in clerical salaries was slightly more than that in manual workers' salaries, but these rose faster in the early post-war years.

A substantial part of the report is devoted to regional analyses of clerical pay. This will tell employees, roughly, whether they are paying too much or too little and may help to solve recruiting problems.

Secretaries as partners

So much sound sense about the role of secretaries and their partner-ship with executives was packed into an address given recently to an Office Management Association course for senior private secretaries that it is a pity it was not heard by executives as well. For no partnership can be a one-way affair.

The talk, entitled Take your secretary into partnership, was given by A. C. Durie, general manager, Administration, Shell - Mex and B.P. Ltd., and is reprinted by Shell in booklet form.

The prime purpose of the private secretary, Mr. Durie said, is to enable the executive to have time to carry out his essential function. She must devise ways to relieve him of unnecessary detail.

If an executive returns to the office after a three-day absence, to find his desk littered with important papers and trivia indiscriminately mixed, then his secretary is not doing her job. That is one extreme. But to expect a secretary to know everything that is important to her boss without some assistance from him is unreasonable.

Too many executives, detained on an out - of - town engagement, ring their secretaries and say, "Oh, Miss Jones. Won't be back till Thursday. Watch out for those figures from Robertson and keep them safe for me. Dig out the stuff from my top drawer and type out the sales statement for the chairman..."

That is the sort of thing every secretary has to cope with from time to time. If her boss has taken her into his confidence she has no excuse for failure. But too often executives expect their secretaries to have a sixth sense that enables them practically to deputize for them, without specific training or briefing.

That is why Mr. Durie's address might have been twice as effective if it had been heard by secretaries and their bosses.

Exports to Canada —a bouquet

The packaging and presentation of some British products equals anything Americans have to offer, say the Dollar Exports Council.

The Council's delegation, which recently investigated British prospects in Canada, visited several supermarkets and found many British food products on the shelves. Did they sell? "They wouldn't be on our shelves if they didn't," said the managers. And their success was largely

Next Month

Shift Work

 \dots case-histories help to show when it is worthwhile \dots

P.T.F.E.

... a new plastic whose unique properties make it of vital interest to many manufacturers . . .

ing methods.

But that was almost the only bouquet the delegation had to offer. Many British firms relied too much on agents, some of whom take on lines to suppress them rather than sell them. Some large British companies were using agents who also handled competitive Japanese lines.

Best results are achieved by maintaining a sales organization in Canada, or at least a full-time representative to supervise distribution. Regular visits by top men are essential. They keep agents and sales staffs on their toes and combine an intimate knowledge of the product with an authority to make important decisions

British firms seemed unaware of the importance of advertising in the press and on TV and radio. Many who did advertise used ideas and layouts which originated in Britainoften quite the wrong appeal for the Canadian market, which is conditioned to American advertising and ideas.

Linking the solution to the problem

The vast majority of production show-conscious problems do not require new research. Somewhere, some time, another firm or a research organization has generally met and solved the problem.

The Department of Scientific and Industrial Research has long recognized the problem of putting the or more employees who applied for small firm in touch with the informa- tickets, 24.5 per cent were for works tion it requires. Their new publica- directors, 18.5 per cent for managing tion, Small firms with big problems, shows what can be done.

It is an account of the results achieved by the Scottish Council (Development and Industry) when they set up a Technical Liaison Service-the first of its kind in Britain.

A team of three investigators visited firms to discover their problems and try to answer them. The Technical Liaison Service helped 109 firms, each with less than 500 employees and without elaborate management organization. They dealt successfully with 160 out of 223 questions

due to the use of imaginative packag- posed, including design, production, sales and financial problems.

> Reason for success is that the team know where to find the answers. or who else can. Some of the problems were passed to D.S.I.R. establishments; others to the co-operative research organizations.

> The idea is catching on. A similar service has been set up in Birmingham, and Bristol may follow suit.

A guide to clean air

The Clean Air Act, which was effective from June 1, means that thousands of works managers and executives will be concerned about things they may never previously have bothered about.

How many can use a Ringelmann Chart, know what a smoke density indicator is, or are sufficiently well acquainted with dust and grit arresters to choose the best for their factory?

To help them, the Federation of British Industries have produced a guide to the Act. It explains what it does and does not require, and defines smoke, dust, grit etc.

Works directors are

Which classes of executive attend industrial exhibitions-and why? A survey made recently by the organizers of the Factory Equipment Exhibition gives some interesting answers.

They found that of firms with 200

The Copeland-Chatterson Co. Ltd.

It is regretted that, in an advertisement which appeared in the July issue of BUSI-NESS, the illustrations of the 'Maybee Tray' and 'Fire Files' were transposed. The error was the responsibility of the advertising agent who offers apologies to all concerned.

directors, 13 per cent for plant engineers, and 13 per cent for production and development engineers. The remaining 31 per cent covered purchasing, welfare, safety and control officers, and office managers.

Executives were prepared to travel long distances to attend. Although 44 per cent came from London and the Home Counties, 26 per cent came from the Midlands and 18 per cent from Scotland.

The most frequent answer to the question why companies send representatives to exhibitions was: "We believe this is one of the best ways of keeping abreast of modern developments." John E. Houldsworth, organizer of the exhibition, believes this answers critics who say that British directors do not take the same interest in technical development as their opposite numbers in Germany and America.

The search for 'managerial aides'

Firms which help companies to find and select men for executive positions must be filling a need, or there would not be so many of them. The first organization to specialize in this sort of work started operations little more than two years ago: now there are half a dozen.

But one of the newer such firms has recognized a shortage equally as acute as that of top managerial talent. It is that of secretaries; not of secretaries who can type impeccable letters: not of secretaries who can think up a thousand reasons why their bosses cannot see callers; but of responsible women who can quickly learn as much about a man's job as about the man himself. These women, although they probably don't know it, are among the scarcest business commodities. And it was mainly about them that a long and revealing correspondence ran in the Financial Times recently.

Specialized Employee Selection, as the new firm is called, call these women 'sub-executives' or 'management aides.' They try to define the qualities of the ideal aide-it was obvious from the Financial Times

Here it is! THE SENSATIONAL

ADDING/LISTING MACHINE



trical or Manual Operation-Sterling or decimal.

OBTAINABLE FROM OFFICE EQUIPMENT **ESTABLISHMENTS EVERYWHERE**



ADWEL ADDING MACHINES LTD.

Administrative Offices: 20, Pall Mall, London, S.W.1

TEL: TRA 2203/4.

SEPTEMBER, 1958

TO ADWEL ADDING MACHINES LTD., 20, PALL MALL, LONDON, S.W.1

Please rush without obligation full details of all Adwel Adding Machines

NAME

ADDRESS



A POCKET SECRETARY!

... FOR THE TOP EXECUTIVE

A precision recorder that slips into your pocket or lies unobtrusively on your desk. A perfect aid to the memory. Facts, figures, conversations recorded immediately.

TRAVELLING—Travelling by car, 'plane or boat can be dictating time!

CONFERENCES—A MINIFON on the table and you have verbatim minutes!

IN THE OFFICE-The perfect secretary!

Small and light (weighs only 2 lbs). Records for hours.

BATTERY OPERATED

* SMALL
AND LIGHT
(weighs only 21bs)

* RECORDS FOR HOURS

minifon

POCKET RECORDER P.55 'S'

For demonstration, phone:-

E.M.I. SALES & SERVICE LTD. (Office Equipment Division)

"His Master's Voice" Showrooms, 363-367 Oxford Street, London, W.I. GROTTEN 7127 or Manchester DEANSGATE 6043 — Birmingham MIDLAND 5821 — Glasgow DOUGLAS 6061.

e EM.164

correspondence that few businessmen have the time or ability to do this for themselves. Different men require different personal qualities in secretaries, quite apart from technical or academic abilities. So S.E.S. generally provide a short list from which the executive makes the final choice.

S.E.S. do not produce aides from a hat. They get them by attracting and carefully testing the large numbers of women who are in unsuitable positions where their abilities and initiative are neither recognized nor rewarded.

And talking of rewards, S.E.S. find that companies are prepared to pay from £650 to £1,200 a year for first-class aides for directors and senior executives.

Doctor in the factory

Not the least advantage to the businessman of moving factory and office to the new town of Harlow, Essex, is the excellent mobile health unit which serves many of the 60-odd factories on its two industrial estates. Each factory pays a 'substantial' subscription but gets far better service than would be possible any other way.

The August issue of *The Practitioner*, in a symposium on industrial medicine, describes the work of the unit from its inception three years ago. Many of the lessons learned from the operation of the Slough Industrial Health Service were applied in planning the Harlow service. Both were made possible by financial assistance from the Nuffield Provincial Hospitals Trust.

According to the medical director, Stephen Taylor, one of the outstanding advantages of the service is the elimination of 'crossed wires' between factory doctor and general practitioner.

In the service they are the same thing, G.P.s serving on a part-time basis. In this respect they differ from Slough. Each doctor is allotted two or more factories for general

People Products Places 1



NEW chairman of the Beecham Group is 55-yearold H. G. Lazell, managing director since 1951. He was responsible for streamlining a loosely-knit structure into five compact, autonomous groups, and for Beechams' success in North American markets with a policy of single-product concentration.



MORE and more business and industrial concerns are buying aircraft. Attractive feature of the recently-introduced Hunting President is that it can be used as a flying office, fitted as required. At least three British firms have used the precedent version, the Hunting Prince, as a flying boardroom.



£250,000 research block opened recently by the Production Engineering Research Association is equipped with up-to-date machine tools and recording instruments (shown here: the metrology department). PERA's recent research in impact extrusion is discussed on page 78.

advisory purposes. Depending on their size, he visits them weekly, monthly, or quarterly to discuss health problems, or industrial hazards. He examines workers exposed to special risk and also new employees, if required.

Nursing sisters help the doctors. A mobile unit operates from Edinburgh House, the headquarters of the service. The sisters do regular rounds of member firms and conduct clinics once or twice a day in the larger factories. A doctor is always available for emergencies.

Dr. Taylor believes that although circumstances in Harlow are special, something like the town's service could be provided wherever there is a concentration of industry within a radius of two miles.

Joint effort by engineering firms

Participation in specialized exhibitions is one of the best ways of getting products known and talked about in North America. So the Birmingham Engineering Centre, with the help of the Board of Trade, are organizing a substantial exhibit at the National Industrial Production Show of Canada, to be held in Toronto next May.

The show, held every two years, provides a sales opportunity for all production engineering equipment, including tools, materials handling, controls, and maintenance.

No recession in office equipment

Whatever other sectors of the economy may be slack, the office equipment industry is not one of them. Exports during the first half of this year were slightly up on the same period last year.

The Office Appliance and Business Equipment Trades Association point out that exports to Australia were almost one-third higher. Western Germany, too, likes British office equipment; she took almost twice last year's figure.

PEOPLE PRODUCTS PLACES 2



CHIEF safety officer, James Clark, M.B.E., J.P., is the newly-appointed chairman of the superannuation fund committee of management at Carerras Ltd.—a post normally held by one of the firm's directors. Mr. Clark, a former mayor of Camberwell, has postponed his retirement, due this year, to deal with problems connected with Carerras' move to Basildon.



TOURING showroom, built into a coach for the National Cash Register Co., has a staff of two, and carries a range of machines, accessories and stationery. With Great Britain as its 'area', it will supplement the work of National's 80 sales offices.

OFFICE-cum-boardroom is an idea adopted by the chairman of Wild-Barfield Electric Furnaces Ltd. to make the best use of available space. The matching furniture is an example of made-to-measure Pandesign office suites built by Carson Bros. (Productions) Ltd.





figures faster than you think

Ready September 15th

Equipment and Methods for the Smaller Office

LAURA TATHAM Editor: Office Equipment News

THE small office can now be as well equipped and efficient as the large one. Manufacturers, conscious of the demands of the man with the smaller office for modern equipment and methods, are producing new lines with his interests in mind: priced to suit his pocket; so flexible in application as to meet the long-term needs of an expanding business.

EQUIPMENT AND METHODS FOR THE SMALLER OFFICE, first book to cover this field adequately, enables you to select from these ranges the items best suited to your requirements. Two-fold in function, it describes in detail the latest machines, equipment and systems for streamlining administration and cutting costs in the smaller office; considers each item as

part of a carefully-planned system, and explains how it will help you achieve your objective with maximum efficiency and economy.

No matter for what purpose you may need office equipment, this practical new guide suggests aeveral methods of doing the job. It describes the possibilities and limitations of each method indicating, where possible, initial and running costs: explains how it can best serve an existing system-and gives scores of time- and labour-saving plans and methods, covering every aspect of office procedure, that can be evolved from the use of the equipment now available.

96 pp., 10\{ in. x 8 in., 5 |- post free

Copies obtainable from

FOR THE

EQUIPMENT

AND METHODS

SMALLER OFFICE

BUSINESS BOOK CENTRE (Proprietors The City Limited Mercury House, 109-1)? Waterloo Road, London, S.E.L (Waterloop 338R)

SEE CONTENTS OVERLEAS

(Watering 33RR) Asiness

FELT & TARRANT LTD. Telephone: HOLborn 4374

oducts



advisory purposes. Depending on their size, he visits them weekly, monthly, or quarterly to discuss health problems, or industrial hazards. He examines workers exposed to special risk and also new employees, if required.

Nursing sisters help the doctors. A mobile unit operates from Edinburgh House, the headquarters of the service. The sisters do regular rounds of member firms and conduct clinics once or twice a day in the larger factories. A doctor is always available for emergencies.

Dr. Taylor believes that although circumstances in Harlow are special, something like the town's service could be provided wherever there is a concentration of industry within a radius of two miles.

Joint effort by engineering firms

Participation in specialized exhibitions is one of the best ways of getting products known and talked about in North America. So the Birmingham Engineering Centre, with the help of the Board of Trade, are organizing a substantial exhibit at the National Industrial Production Show of Canada, to be held in Toronto next May.

The show, held every two years, provides a sales opportunity for all production engineering equipment, including tools, materials handling, controls, and maintenance.

No recession in office equipment

Whatever other sectors of the economy may be slack, the office equipment industry is not one of them. Exports during the first half of this year were slightly up on the same period last year.

The Office Appliance and Business Equipment Trades Association point out that exports to Australia were almost one-third higher. Western Germany, too, likes British office equipment; she took almost twice last year's figure.

PEOPLE PRODUCTS

PLACES 2



CHIEF safety officer, James Clark, M.B.E., J.P., is the newly-appointed chairman of the superannuation fund committee of management at Carerras Ltd.—a post normally held by one of the firm's directors. Mr. Clark, a former mayor of Camberwell, has postponed his retirement, due this year, to deal with problems connected with Carerras' move to Basildon.

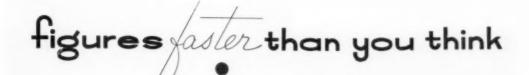


TOURING showroom, built into a coach for the National Cash Register Co., has a staff of two, and carries a range of machines, accessories and stationery. With Great Britain as its 'area', it will supplement the work of National's 86 sales offices.

OFFICE-cum-boardroom is an idea adopted by the chairman of Wild-Barfield Electric Furnaces Ltd. to make the best use of available space. The matching furniture is an example of made-to-measure Pandesign office suites built by Carson Bros. (Productions) Ltd.







Comptometer

HIGH-SPEED
ELECTRIC ADDING
& CALCULATING
MACHINE

Better Products

Offices and Schools

London and Suburbs, Belfast, Birmingham, Blackburn, Bradford, Bristol, Cardiff, Coventry, Dublin, Edinburgh, Glasgow, Hull, Leeds, Leicester, Liverpool, Manchester, Middlesbrough, Newcastle, Norwich, Nottingham, Sheffield, Southampton, Stoke - on - Trent, Swansea, Wolverhampton.

Comptograph

THE NEW ELECTRIC
HIGH-SPEED ADDING/LISTING
MACHINE WITH MANY
EXCLUSIVE FEATURES

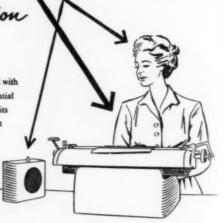
Better Business

COMPTOMETER LTD. (Gt. Britain) formerly FELT & TARRANT LTD.
Head Office: Aldwych House, Aldwych, London W.C.2 Telephone: HOLborn 4374



another FONADEK contribution to efficiency

Here is yet another FONADEK development designed to increase efficiency within your organisation. Telephone amplification combined with intercommunication. Here you have the FONADEK, that essential complement to the telephone, that time and money saver, with all its advantages and more besides. You can still make a telephone call without that exasperating business of "holding on". You and others with you can carry on a telephone conversation without even touching the instrument. But with FONADEK INTERLINK you have the additional advantage of one or more portable intercom units, which can be fitted anywhere in your organisation, giving you, at your fingertips, immediate contact with key members of your staff. Why not send for details today? Just write "FONADEK INTERLINK" on your letterhead and we will do the rest.



FONADEK INTERLINK

FONADEK (BRANSON) LIMITED DEPT BU/1 VIVIAN ROAD, HARBORNE, BIRMINGHAM 17



indivi dual ity!

Very few people have average figures, the human frame and shape differs in every individual. Theoretically, therefore, for true posture and the comfort that is essential for efficiency, the answer would seem to be a chair constructed in accordance with the anatomical dimensions of the user. The alternative . . . ?

A chair that is truly adjustable!

Here at last . . .

is a chair that has everything. The double curved backrest is adjustable for height and angle and is springloaded with tension control. The fully-sprung seat can be raised or lowered with a new adjustment which allows free swivel movement yet stays at the desired seat height. All these features, and more, plus the wide range of 'Du-al' upholstery materials and finishes, ensure that here at last is a chair designed for individuality.

> Du-al model P.24 Secretarial Swivel Posture Chair



Du-al have the answer to all your seating problems



tubular steel furniture

DARE-INGLIS PRODUCTS LIMITED Du-al House, Byron Road, Harrow, Middlesex

Telephone HARrow 5141 (5 lines)

Telegrams DU-AL, HARROW



behind the times?

... does your manager still sit on a high stool? Of course he doesn't. Just as the modern executive suite has replaced the old fashioned office, so has the factory floor and machine shop changed out of all recognition. But, in spite of modern conditions, ACCIDENTS STILL OCCUR. This is where Film can help by factually showing preventative measures. . . . Managements will find these films from the G.B. Film Library invaluable aids in teaching Safety First precautions.

No. 1. Organisation	Cat. No. IF.3814 B/W Hire rate 10
	Cat. No. IF.3815 B/W Hire rate 10
No. 3. Handling	Cat. No. IF.3816 B/W Hire rate 10
No. 4. Falls	Cat. No. IF.3817 B/W Hire rate 10
No. 5. Safe Clothing	Cat. No. IF.3818 B/W Hire rate 10
No. 6. The Safety Supervis	orCat. NoIF.3819B/W Hire rate 10
No. 7. Early Handling of	
Spinal Injuries	Cat. No. IF.3979 B/W Hire rate £

For details of these and other films on Industrial Training write to

PROPRIETORS: RANK PRECISION INDUSTRIES (B.A.F.) LIMITED · I, AINTREE ROAD · PERIVALE · GREENFORD · MIDDX · PERIVALE 7401/9



Let's face the facts

If you prepare each week

PAY ROLL, PAY ADVICES, EMPLOYEES RECORDS, TAX RECORDS as separate clerical operations then, indeed, you should face the facts.

i.e. Cut clerical pay roll time by 40%

Give each employee an exact make-up of net

Reduce clerical errors

Save on tax calculations
Anyone can operate Kalamazoo Copy-Writer. No
machinery, no staff complications, we even teach
your clerks how to do it. Face the facts now.

Kalamazoo

WAGES &

Get full details by returning this coupon.

To: KALAMAZOO LTD., NORTHFIELD, BIRMINGHAM 51 Please let me have details of your Wages and Salaries methods without obligation

Nami

Name of Company

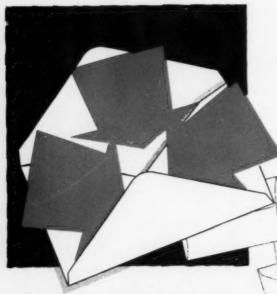
Address

958

KALAMAZOOLTD . NORTHFIELD . BIRMINGHAM 31

SEPTEMBER, 1958

31



ENVELOPES FOR MODERN MAILING MACHINES

Send for the set of specimens

left ... right or centre!

The filling machine has changed the pattern of mailing in modern industry. It has even changed the shape of the envelope. Some machines require envelope flaps to open to the right, some to the left. Some need partially gummed flaps, some require all-over gumming. Some use hot water and some use cold. We are used to such idiosyncrasies, having coped with them from the start.

If you have an envelope problem, may we offer you-through your usual printer or stationerthe capabilities and experience of the world's lar-

gest envelope factory?



ENVELOPE DIVISION APSLEY MILLS, HEMEL HEMPSTEAD, HERTS

PRO TEM?

True, the Fire Insurance will finance a new building, new stock. But how long does it take a business to recover after a fire? Could you afford to carry on during this period? Legal & General have a 'Loss of Profits' Policy to cover this difficult, in-between time. It helps meet those overheads which must still be paid forprofits or no profits.

Such insurance is the only positive way of ensuring that flames will never rob you of your profits. If you have not already considered your own position following a fire, may we suggest you get in touch with us at once? It will be too late if you find yourself sitting amongst the debris.





LEGAL & GENERAL ASSURANCE SOCIETY LIMITED

CHIEF ADMINISTRATION: 188 Fleet Street, London, E.C.4. Telephone: CHAncery 4444



Cope-Chat modern plant, production methods and service in designing and manufacturing economical business forms are without equal.

Our long experience in this field ensures the accurate registration and precision printing which modern business records demand.

LEDGER CARDS STATEMENTS RECEIPT SETS

ONE-TIME CARBONS

We are especially equipped for INVOICE SETS ORDER FORMS PAY ROLLS

CLOCK CARDS STORES REQUISITIONS WORKS DOCUMENTS

N.C.R. (No Carbon Required) PAPER CARBON-BACKED FORMS CONTINUOUS STATIONERY FOR TYPEWRITERS AND TABULATING MACHINES

Complete and post this coupon today for full details of the "Pull-away" Set Name of Firm Name and position of writer Address

(Block Letters Please) PA-B-9-58

You can send your enquiries with confidence

THE COPELAND-CHATTERSON CO. LTD.

London Office & Showrooms: GATEWAY HOUSE, 1 WATLING STREET, LONDON, E.C.4 Telephone CITy 2284

Registered Office & Works: STROUD, GLOS.

Branches at : Birmingham, Bristol, Cardiff, Glasgow, Leicester, Leeds, Liverpool, Manchester, Newcastle upon Tyne and Sheffield

Agent in Ireland: 8 Crowe Street, Dundalk

Agents throughout the World

SHARP CLEAR COPIES STRAIGHT FROM THE ORIGINAL thousands if needed in minutes!



graphy for use on an offset litho machine at one fifth the cost of photographic plate making. This means that much more work can now be handled quickly and efficiently by your own internal duplicating department. Think how much and reduce too.

this will save you in cost and in time! XeroX equipment can also produce up to 6 copies directly-a very convenient additional facility-and it will enlarge Xerography is clean, requires no dark room, no sensitized materials-and no skilled operator. You would be well advised to see how XeroX equipment can cut duplicating costs in your business right away.

Please ask your secretary to attach this coupon to your letterhead.

XEROGRAPHY

perfects offset duplicating



K-XEROX LTD

Agents and representatives throughout the world

My Company is interested in how it can cut office printing, copying and duplicating costs through the new process of zerography. Further details please.

R/9/58



Not just a desk . . .









... A COMPLETE SUITE

If you wish your office to look impressive as well as efficient, the new 400-Style Suite is the answer. A basic design of exceptional merit has been adapted to a full range of complementary units. Varying desk capacities and facilities may be provided for each member of an organisation whilst maintaining harmony and dignity throughout the furnishing scheme. Immaculately styled, with many interesting features, and built to engineering standards, the 400-Style Suite marks an important advance in the fitting-out of business premises.

Please ask for Brochure BU999.





400-Style Double Pedestal Desk

400-STYLE

a matching suite of office furniture in steel

HARVEY

G. A. HARVEY & CO. (LONDON) LTD., WOOLWICH ROAD, LONDON, S.E.7. GREenwich 3232 (22 lines

SEPTEMBER, 1958



marvellous! amazing! terrific!..



"It's marvellous discovering a duplicator that turns out my bulletins and graphs in seven colours at one go," said the Sales Manager.

Mary said "Yes and"

"It's amazing," cut in the Managing Director, "that from just one paper master you can produce such perfect copies on cardboard, shiny paper and even gummed labels."

"Yes and" began Mary.

"It certainly represents a terrific economy," beamed the Accountant, "and running



costs are very low."

Mary gave up trying to tell them that, quite apart from Banda being so simple to use. she no longer has the worry of dirty hands. soiled clothes and smudged copies. Perhaps men wouldn't be able to appreciate the true importance of these points. anyway.

You will be equally impressed with what Banda can do for your business. Call in a Banda specialist right away and see for yourself.

costs no more than an ordinary duplicator



OCK & ANDER

Head Office: BANDA HOUSE, CAMBRIDGE GROVE, LONDON, W.S. Tel: RiVarsida 4121 London Sales Office: 58-58 KENSINGTON CHURCH ST., LGNDON, W.S. Tel. WEStern 7250

Branches: Belfast, Birmingham, Bristol, Cardiff, Dublin, Dundee, Edinburgh, Exeter, Glasgow, Leeds, Leicester, Liverpool, Luic Manchester, Middlesbrough, Newcastle, Nottingham, Preston, Reading, Sheffield, Southampton, Stoke-on-Trent, Tunbridge We

How to make MECHANISED ACCOUNTING your most profitable investment



Mechanised accounting is much more than a matter of buying machines. It should be a high-yielding investment. It must therefore be planned: made-to-measure to fit not only your present but your future needs. As an example of the kind of investment it will pay you to make, take the Remington Rand 'FOREMOST' Accounting Machine.

- Its 'simplest to operate' keyboard allows unlimited accounting narration.
- Its simple form feed ensures greater output, and form designs can be easily amended to meet any new needs.
- The totalling units are available in a great variety of styles (e.g.: sterling, decimal, weights and measures, hours and minutes).
 Their capacity can always be expanded to cope with increased work.
 Additional units can be fitted at any time to extend the scope of the machine.
 - And 'FOREMOST' can be synchronised with a punched card installation, thus greatly enlarging its versatility.

Accounting is merely one of the present-day office efficiency problems to which Remington Rand know so many of the answers. They are always ahead in development, because their international resources combine skills and techniques gathered from a world-wide market. Write NOW for the 'As easy as ABC' booklet.

PART OF THE PROOF THAT

Remington Rand

Business Equipment Centres in all principal cities

REMINGTON RAND LTD . 1-19 NEW OXFORD STREET . LONDON WC1 . CHA 8888

SEPTEMBER, 1958



It's safest to aim high!

Sellotape

simplifies the job

Sellatape is the Registered Trade Mark of Adhesive Tapes Ltd.

Sole Distributors in the U.K.:

THE INDUSTRIAL SELLOTAPE DIVISION
of Gordon & Gotch Ltd., 8-10 Paul Street, London, E.C.2
Telaphone: BIShopsgate 6511

Hercules would not have lasted long if he hadn't. The Stymphalian birds here, with their brazen beaks and claws, presented a nasty problem. But he destroyed them by brandishing a metal rattle, and shooting them down with poisoned arrows as they soared in terror . . .

In modern packaging, as in ancient mythology, it's often important to aim high. When the air seems full of packaging problems, call in one of our technical experts. Backed by the Herculean resources of the factory producing the largest range of tapes in the world, he will aim not merely to lessen those problems, but to solve them once and for all. He will show you, too, how the most modern packaging can actually cost you less when Sellotape simplifies the job.

For as little as

with a new GLIVER coin handling machine

Now! The Oliver Typewriter Manufacturing Company makes it possible to instal a coin counting machine for as little as £104. 10. 9d.!

All 5 models in Oliver's superb, new range are remarkably *low-priced*. As a result, businessmen, cashiers, treasurers and everyone responsible for handling coin in quantity can now benefit from the amazing speed and complete accuracy provided by mechanical coin handling.

Every machine in this new Oliver range has been precision-built. All risk of error in handling coins is eliminated. And these machines will operate at speeds ranging from 1,000 to over 2,000 coins per minute! Hours of slow, tedious work by many hands can now be done by one Oliver machine in minutes! All English coins sizes handled. Send today for illustrated brochure.

WODET . H.

Hand operated coin counting machine. Works at a rate of 1,000 coins per minute. Automatic cut-outs count coins into bags of 10/to £5 values.

£104. 10s. 9d.



MODEL 'C'

Electric, 1,000 coins per minute. Auto feed, cutouts and rejector.

£348, 4s. 8d.



MODEL 'E'

Electric. Counts 1,500 coins per minute. Auto

£189, 15s, 4d.



MODEL 'M'

Electric. Counts over 2,000 coins per minute. Auto feed and cut-outs.

£400. 4s. 0d.



GLIVER

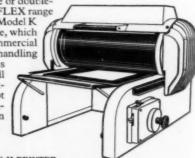
TYPEWRITER MANUFACTURING COMPANY

COIN HANDLING MACHINE DIVISION, DEPT. B, INGERSOLL HOUSE, 7/9 KINGSWAY, LONDON, W.C.2.



Nice thought, if such a thing were possible! But with the help of Ilford AZOFLEX photo-printing equipment, just one pair of hands can work marvels, rapidly turning out perfect copies of typed or printed matter, manuscripts and drawings—whether translucent or opaque, single or double-

sided. Included in the AZOFLEX range is the compact and versatile Model K 10 Mark II Printing Machine, which is specially designed for commercial office use and is capable of handling bound volumes as well as individual sheets. As with all AZOFLEX machines, darkroom accommodation is not required, there are no unpleasant fumes, and operation is simplicity itself.



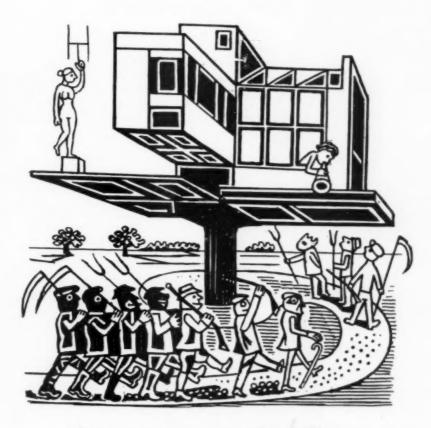
AZOFLEX MODEL K 10 MARK II PRINTER

Table-model photo-printing machine for documents up to $10^{\circ} \times 13^{\circ}$. Maximum output about 180 copies per hour. Built-in timer for presetting and controlling exposures. Normally used with two Azoffex T18 developing machines, occupying bench space of $5' \times 2'$ 6°.

Enquiries to: Ilford Limited, Industrial Sales Department AZ10E, Ilford, Essex. Telephone: Ilford 3000.



PHOTO-PRINTING MACHINES AND MATERIALS



A very strange dwelling

The great days of the English eccentrics are over. But there are still some people rich enough, and as some would think, mad enough, to build a house in open defiance of planning authorities, Watch Committees and the finer feelings of their neighbours.

Such a one was Launcelot Foley. The house he built in a quiet corner of Essex had a flat roof, windows in unconventional places, and the principal bedroom slung above the living room like a minstrel's gallery. But it was warm, superbly finished, and crammed with all the labour-saving devices which decent, but impoverished, Englishmen affect to despise.

Local feeling, defeated at the planning stage, ran high. The incensed peasantry and bourgeoisie gathered at the conventionally sham-Tudor local and voted for direct action: they marched on the house with pitch-forks and shotguns.

It might have been a nasty situation, but Launcelot

Foley was but mad north-north-west. With commendable foresight, he had protected his house with Chubb door locks and window catches: it was as impregnable as a fortress. "Aesthetics is a matter of taste," said Foley darkly, "but in matters of security there can be no dispute."

In this he was perfectly correct. If you wish to ensure that your home is your castle, have a word with your ironmonger about Chubb locks and catches. Or, if you have an unusual security problem of any kind, why not write or telephone to Chubb & Son's Lock and Safe Co. Ltd., 175-176 Tottenham Court Road, London, W.I. (MUSeum 5822).



We are exhibiting at the Brussels International Exhibition. British Industrial Pavilion, Block C.

DON'T LEAVE IT TO CHANCE-LEAVE IT TO CHUBB

Lockers for "clockers"



RUBERY OWEN & CO. LTD. INDUSTRIAL STORAGE EQUIPMENT DIVISION

Member of the Owen Organisation
WHITEGATE FACTORY, WREXHAM, N. WALES. Telephone Wrexham 3566-8

BRANCHES: BIRMINGHAM COVENTRY MANCHESTER SOUTHAMPTON BRISTOL GLASGOW London Office: Kent House, Market Place, Oxford Circus, W.1

TEMPORARY STAGING

The simplicity of the Kee Klamp system is invaluable for staging to provide periodic inspection at any level. It enables extensions or alterations from the original to be made quickly and easily.

SOLVE YOUR

CONSTRUCTION PROBLEMS

WITH

Versatile 7

KEE KLAMPS

Regd. Trade Mark

Kee Klamps exploit steel tubing with its constant strength in every direction. They form rigid joints between one tube length and another and simplify the building of every conceivable type of structure. Seven sizes to take tubing from 3" to 2" nominal bore give a wide choice of material.

Integral grub screws for quick fixing — no loose nuts and bolts, no sharp edges or dust collecting cavities.

PERMANENT STORAGE

Kee Klamp Storage Racking can be "task-tailored" to make the most efficient use of available space. It can be built up to the ceiling, down to the basement, over gangways, etc. It can release valuable floor area for production purposes.

KEE KLAMPS CONVERT TUBING INTO STRUCTURES

7 SIZES 70 TYPES

The Key to all Problems of Construction.
Kee Klamps and tubing are locked in position—
simply by turning the key!

The GEO. H. GASCOIGNE CO. LTD., 507 GASCOIGNE HOUSE, READING, BERKS

Telephone READING 54417 (3 lines)



LEABANK OFFICE EQUIPMENT LTD.

Clifton House, Euston Road, London N.W.1 . Telephone EUSton 1474

Member of the Owen Organization

CAPITAL can be a decisive factor

for industrial and commercial enterprises in their expansion and progress. ICFC's function is to provide capital for small and medium concerns in Great Britain in the form of longterm loans and share capital.

Our booklet, J14, 'Capital for Business and Where to Find It', will be sent on request.



INDUSTRIAL & COMMERCIAL FINANCE CORPORATION LIMITED

Shareholders: The English and Scottish Banks
Head Office: 7 Drapers' Gardens, London, EC2
Tel.: National 8621-5

BRANCHES

Birmingham – 214 Hagley Road Edgbaston 4181
Leicester – 51 Friar Lane Granby 854

Manchester – 75 Whitworth Street Central 5429
Leeds – Headrow House Leeds 22727

Edinburgh – 55 Charlotte Square Edinburgh 50212



ANOTHER Bartlett COMPLETE KITCHEN INSTALLATION

PHOTOGRAPHS BY THE COURTESY OF THE ROM RIVER CO. LIMITED MANAGEMENT CATERING (LONDON) LIMITED



G. F. E. BARTLETT & SON LTD

MAIN WORKS: MAYLANDS AVENUE, HEMEL HEMPSTEAD. Telephone: BOXMOOR 4242
LOHOON SHOWROOMS: BELL STREET, LONDON, M.W.1. Telephone: PADDINGTON 8222

BIRMINGHAM: 12 Whitmore Road. Tel.: Victoria 1615. MANCHESTER: S30 Stretford Road. Tel.: Trafford Park 0288

You can see

Addressall

advantages

at the BUSINESS EFFICIENCY EXHIBITION



You can see the latest techniques and the most efficient machines for addressing and all repetition in printing work at the Addressall Stand (Number 53) in the Business Efficiency Exhibition at Manchester, between September 22nd and 27th.

Please send a copy of "Addressall Advantages" to:

NAME

ADDRESS_

in YOUR OWN OFFICE



This new brochure explains why the Addressall System is the choice of so many large and small firms. Ask your secretary to send for YOUR COPY—it's free and places you under no obligation whatsoever.

The Addressall system for addressing, indexing and tabulating is one of the most efficient and least expensive on the market. The system is based on the Indexograph typewritable stencil, which is typed in your own office, light and easy to handle. There is a full range of machines, one of which is right for your business.

Addressall

Southampton Row, London, W.C.1.

Tel: HOLborn 1524/8 (5 lines)

The new

olivetti

Elettrosumma 22

the fastest

adding/listing machine

yet produced



With a speed of 210 cycles per minute the Olivetti Elettrosumma 22 is the fastest adding/listing machine yet produced. Entirely new in design, the Elettrosumma is an easy-to-operate machine which does not require any specialist training. It has the simplified 'streamlined' keyboard which allows figures to be entered (without the mental effort of selecting columns) in the same order as when written by hand, and with a minimum of hand movement. Touch operation comes readily and almost subconsciously. The printed record provides a permanent check on the accuracy of the calculation. In short, the Elettrosumma 22 is a fast, reliable machine which will increase the output of any department while lessening the fatigue at the same time.

CAPACITY

Entering: £9,990,599:19:11}

or £99,999,999:19:11 Totalling: £999,999,999:19:11

WORKS IN STERLING OR WHOLE NUMBERS

When the cut-out lever is moved up the shillings and pence columns are eliminated, and up to 8 digits may be entered and totals of 9 digits obtained.

MULTIPLICATION

The Elettrosumma is so fast that simple multiplication may be carried out very rapidly by successive additions of the same amount.

* See it demonstrated at the Olivetti Stand No. 65 at the Business Efficiency Exhibition, City Hall, Manchester. Sept. 22nd-27th

SEPTEMBER, 1958



There is
no other machine
combining all these
special features
at any price –
£89.15.0

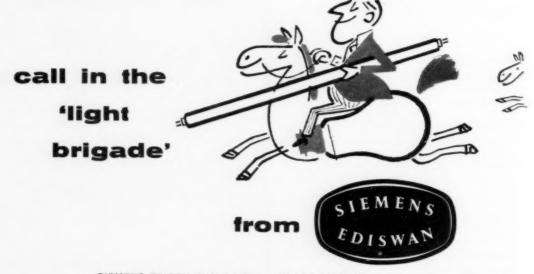
Write or phone to Olivetti for full particulars

British Olivetti Ltd

30 Berkeley Square, London, W1 Telephone: GROsvenor 6161

ALL your lamps earning their keep?

How long is it since you checked your lighting bills against your lighting needs? It is quite possible that you are wasting money because some of your lamps are not in the best position or in the most suitable lighting fittings to give you the best and most economical result. A planned lighting layout can often give you better lighting without increased running costs. That's just one example of the help you can get from the 'light brigade'—the Siemens Ediswan advisory service—who will help you to put every lamp where it can really earn its keep. The range and variety of Siemens Ediswan lamps is very wide indeed. Only an expert who knows the range from end to end can say whether you are using the best and most economical lamp in every situation. That is why we invite you to make full use of our advisory service—and remember, unlike the famous one in history, this 'light brigade' makes no charge.

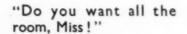


SIEMENS EDISON SWAN LTD. AN A.E.I. COMPANY

Lamps & Lighting Division, 38/39, Upper Thames Street, London E.C.4 and branches · Telephone : CENtral 233

CRC 11/30

BUSINES



"Er . . . excuse me!"

"Filing Cabinets are a nuisance... I wish..."



"By using their shelf lateral revolving file unit—which, incidentally, is mobile—we get up to 300 files in a floor space of 33 sq. ins., and what is more, the filing clerk need never leave her desk—all unit wheels are finger-revolved, and file selection immediate . . . or, if preferred, we can have JETALAT shelf lateral cupboards.

Alternatively, we could fill up those unused spaces in the office with our own open shelving and attach JETALAT shelf dividers—this would double up the filing space of those drawer cabinets, with half the floor space occupied!"

'JETALAT' is shelf lateral filing at its best . . . no hooks, clips or bars to go wrong . . . the famous Jetleys transfer unit is naturally incorporated.





To: JE	TLEYS	G	REAT BRITA	IN	LTD.	dudders	field, Yor	kя.
	arrange		demonstration	of	JETLEYS	without	obligation	00

FIRM

EXECUTIVE

ADDRESS

DATE

suth Africa: Jetleys Systems (Pty.) Ltd. Head Office: 93 Longmarket Street, Cape Town. New Zealand: Marvin (NZ) Ltd., 118/120 Wakefield Street, Wellington.

SEPTEMBER, 1951

51

contracts from Hoover Ltd endorse the supremacy of



VENTILATION

Time and time again, industrialists large and small call in Colt. And for three good reasons. Colt ventilation systems depend in the main on internal convection currents-not external forces-and are therefore little affected by the vagaries of the wind. Colt offer an unparalleled range of ventilators. And most important, every Colt recommendation is based on a thorough analysis of the building, plant and process either from a site survey or drawings. Such thoroughness influences firms such as Hoover Ltd. It will impress you, too. Ask your secretary to send for a free manual to Dept. 028/9

Among the 12,000 major Industrial Organisations using Colt equipment are:

32 contracts: I.C.I. Ltd.

56 contracts: de Havilland Aircraft Co. Ltd.

20 contracts: Courtaulds Ltd.

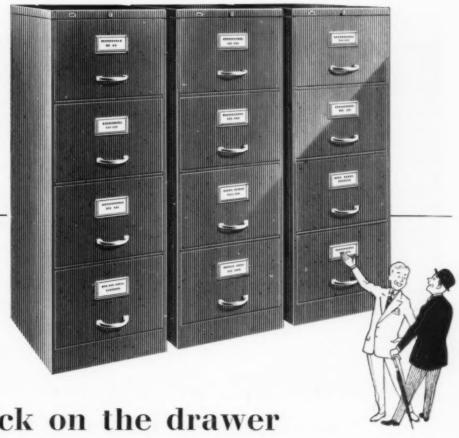
11 contracts: Dunlop Rubber Co. Ltd.

11 contracts: Steel Company of Wales Ltd.



COLT CO2046 VENTILATORS AT HOOVER LTD., HIGH WYCOMBE

COLT VENTILATION LIMITED · SURBITON · SURREY · TELEPHONE: ELMBRIDGE 0161 (10 LINES)



Quick on the drawer

SANKEY-SHELDON high quality fire-resisting steel filing cabinets have smooth running drawers on ball-bearing slide arms. By fitting the Sankey-Sheldon visible suspended system, speed of filing is achieved, with quick and easy access to contents.

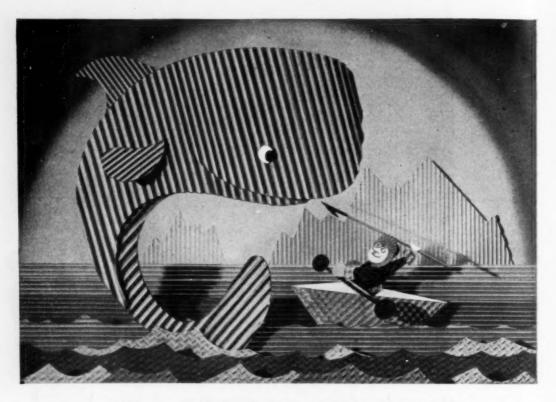
STEEL FILING CABINETS BY

Samkey-Sheldom

OF COURSE!

46 Cannon St., London, E.C.4. Telephone: CITy 4477 (18 lines)

Iso manufacturers in steel of: - CUPBOARDS · PARTITIONS · CHAIRS · DESKS ABLES · CLOTHES LOCKERS · SHELVING · STORAGE BINS · LIBRARY SHELVING



No packaging assignment is too big for Reed to take on

No detail is too small to receive our fullest attention – conversely, no packaging proposition is too big for our capacity. As part of the comprehensive Reed packaging service we pride ourselves on offering unique benefits to our customers. Because eight Reed factories 'on permanent call' can carry out the largest assignments with swift efficiency.

If you have a packaging need – improved protection, or presentation, how to pack for your export markets – no matter what it is we can help you. Because Reed Research is continually developing new packaging techniques.

Reed are the pioneers of corrugated fibreboard cases. The Reed sales network covers the whole of the United Kingdom. Contact the nearest Reed Office for immediate, complete, personal service.



GREAT WEST ROAD . BRENTFORD . MIDDLESEX

Telephone: EALing 4555

BIRMINGHAM · CAMBRIDGE · EDINBURGH · MANCHESTER

NEW HYTHE (Maidstone) · TOVIL (Maidstone) · WARRENPOINT (Northern Ireland)

Reed Packaging Service to Industry







The problem represents the wages due to one of 65 fitters who has worked at the flat rate of $5/1\frac{1}{2}d$, per hour per 44-hour week, plus time-and-a-quarter for the first 10 hours overtime, and time-and-a-half for the $7\frac{1}{8}$ hours remaining.

$(44 \times 5/1\frac{1}{2}d) + 10(\frac{5}{4} \times 5/1\frac{1}{2}d) + 7\frac{1}{2}(\frac{3}{2} \times 5/1\frac{1}{2}d) = £$?

Question: How long does it take you to find the correct answer for the 65 men each paid a different rate and each working different hours - not forgetting time taken to check your result?

Day in, day out, you are paying people to answer problems like this – problems which thousands of Marchant calculators are doing every day with 100% accuracy every time. With a Marchant calculator, you can have at your instant disposal a lightning brain that never tires, never gives the wrong answer, and speeds up your figurework enormously. Why not prove it? Fing up Block & Anderson now to see how long it takes the Marchant to solve this little problem. Better still, ask to see it in action on your own problems.

MARCHANT

the world's fastest calculator



BLOCK & ANDERSON LIMITED

Head Office: BANDA HOUSE, CAMBRIDGE GROVE, HAMMERSMITH, LONDON, W.S. Tel: Rivereide 4121
London Sales Office: 58-68 KENSINGTON CHURCH STREET, LONDON, W.S. Tel: WEStern 7258

ranches: Belfast, Birmingham, Bristol, Cardiff, Dublin, Dundee, Edinburgh, Exeter, Glasgow, Leeds, Leicester, Liverpool, Luton, anchester, Middleebrough, Newcastle, Nottingham, Preston, Reading, Sheffield, Southampton, Stoke-on-Trent, Tunbridge Wells.

Nothing rivals the Vauxhalls for Value . . .

.... AND NOWHERE can you see and try the full range of Models better than at Capital Motors in London's finest Vauxball Showrooms.

Dealing with Capital Motors means a friendly, personal service, designed to make buying your new Vauxhall the exciting and pleasurable occasion it ought always to be.

- * Any make of car Part-Exchanged
- * Cash or terms, as you prefer





Company Car Problems Solved! NEW VAUXHALLS Every Year

The Capital Annual Replacement Scheme and the brilliant Vauxhall Models together form a proposition of unsurpassed value. The Scheme is designed to meet all needs, from one car to a thousand. For Fleet Operators buying and selling is simplified, and for all car-users there is the certainty of first-class motoring, fixed costs, and a minimum of time lost off the road.

Write or telephone for full details today.

CAPITAL MOTOR CO. LTD · VAUXHALL, BEDFORD AND SCAMMELL DISTRIBUTORS

Head Office: Remington Street, City Road, LONDON, N.1 Tel. CLErkenwell 7456 Showrooms: Tottenham Lane, Hornsey, LONDON, N.8 Tel. MOUntview 3451



Convert old documents into new packing material

Why be cluttered up with old files, letters and confidential documents when you can make your waste-paper pay? This amazing machine not only shreds your waste-paper into unreadable strips (so keeping your secrets safe) but converts it into valuable packing material. Neat, compact and easily transportable, the Typhoon is so robust that even paper-clips, pins and staples cannot damage it. Copes with 70lbs. of waste-paper per hour. Cost? £150—plus £15 for the smart, lightweight tubular trolley.

TYPHOON DOCUMENT SHREDDER

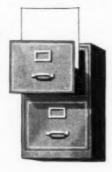
For further details contact:

HALSBY & CO. LTD., DEPT. B.E., 52 DEAN STREET, SHAFTESBURY AVENUE, LONDON W.1. GERrard 4163

STRONG



SMOOTH ACTION



HIGH FINISH



CHECK



FILING CABINETS BY

VICKERS

Vickers steel filing cabinets are available in two grades, and a choice of two colours.

They can be supplied to accommodate most types of filing systems. You should have on your own file the illustrated folder describing the full range of Vickers steel furniture and accessories.

CABINET-MAKERS IN STEEL

VICKERS-ARMSTRONGS (ENGINEERS) LIMITED 6 POWDER MILL LANE • DARTFORD • KENT



CONTINUOUS STATIONERY

the modern way

The typist - a vital link in the chain of production, marketing and distribution. Through her typewriter flow the Works Orders, Despatch Notes, Invoices, Purchase Orders and the many other forms essential to business. Far too often, however, her production suffers through unnecessary repetitive typing, and time wasted in the handling of carbon paper and loose forms.

If this is your problem may we show you how the Econojet Typewriter Attachment, with Econoset Continuous Stationery, reduces unproductive operations to the barest minimum.

PETTY AND SONS LIMITED

Whitehall Printeries . Leeds 12

Telephone: Leeds 32341





get me a 'Verifax' copier

Copy and check, copy and check... what a waste of a typist's time! It needn't be so, though; the Kodak 'Verifax' Copier has seen to that. The 'Verifax' Copier can make several copies of any written, printed, typed or drawn document in one minute. These copies never need checking because they're photo-accurate. They're produced dry—and they never deteriorate.

Think of the saving in copying-time and trouble! And the saving in money, too—the 'Verifax' can save its cost in less than two months. The 'Verifax' Copier is increasing office efficiency up and down the country. You just can't afford to be without it.

KODAK



COPIER





-a thousand and one uses-

Every office, every department, every business needs Durathin perfect coloured pencils for graphs, maps, accounts, and all records. Make your mark with a Durathin and create a permanent impression. Durathin leads are:

- * IMPERVIOUS TO WATER
 not subject to destruction by weather,
 accidental welting.
- ** SMEAR PROOF
 will not set off or smudge even by contact with moist hands.
- will not crumble or break even under hard pressure.
- hard pressure.
- Can be sharpened to a needle point.

 LONG LASTING
- Points make thousands of impressions with one sharpening.
- * MADE IN 24 VIVID COLOURS.



perfect coloured
PENCILS

MADE BY THE VENUS PENCIL CO. LIMITED

THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAM



You'll find it a lot easier with Columbia 'Readymaster' forms! Whatever type of Hecto Duplicating you use, 'Readymaster' will provide up to 300 duplicates quickly, simply and economically. Every detail of the original sheet is reproduced perfectly—including entries typed or written on the original. The Columbia 'Readymaster' system does, in fact, provide a printed master for any type of business system—and all you need is plain paper. 'Readymaster' forms give perfect registration, are clean to handle, ready for instant use, and can be re-run. Write or 'phone today and find out how 'Readymaster' can help you.

Ready Master

COLUMBIA RIBBON & CARBON MANUFACTURING CO. LTD.

ASTORIA HOUSE · SHAFTESBURY AVENUE LONDON · W.1 Telephone: Gerrard 1373

CAS

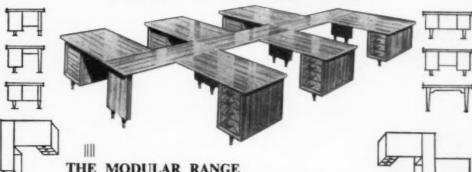
THE PROPERTY OF THE PARTY OF TH

Gold



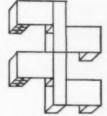
Seal

The modern wood Office Furniture



THE MODULAR RANGE

is advised for maximum economy in the use of floor area. Quotations obtainable for any planned arrangement. A comprehensive range of Pedestals, Cupboards, Tops, etc., is always available.





STANDARD RANGE ...

This includes Desks and Tables of all sizes suitable for most office requirements

Finish: ALL GOLD SEAL FURNITURE IS FINISHED OAK OR MAHOGANY

· EXECUTIVE SUITE...

- · This impressive Suite includes
- . Desks, Boardroom Tables, Wardrobes,
- Bookcases, Telephone Cabinets,
- Cocktail Units, etc.

Desks also available with large over-hanging tops

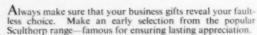


FOR FURTHER PARTICULARS OR ADVICE, PLEASE WRITE OR TELEPHONE TO: GOLD SEAL, LEA VALLEY RD., PONDERS END, MIDDX. Tel. HOW 2714-5-6



Gifts in Good Taste * -generate Goodwill *

公 公 公 公 公 公 公 公 公



Our illustrated brochure 'Returning Again,' is packed with practical suggestions. Write for a free copy—the unfailing answer to your annual goodwill problem.

We also specialise in Advertising Calendars; our illustrated folder for 1959 is now available.

We welcome a visit from you to our Showrooms!

R. SCULTHORP

THE FIRM WITH A GIFT FOR ADVERTISING

Dept. G17, Blackfriars House, New Bridge Street, London E.C.4.

Tel: FLEet Street 5754 (5 lines)

Specialized

ANY SIZE - PLAIN OR WITH ACCURATE HOLE OR SLOT PERFORATIONS

Paper

PLAIN OR GUMMED IN ANY WIDTH FOR ANY TYPE OF MACHINE

WE are specialists in the production of paper rolls for all individual requirements, accurately and cleanly wound in any width and for all types of specialized machines. Your enquiries will have our prompt and careful attention. May we quote you?

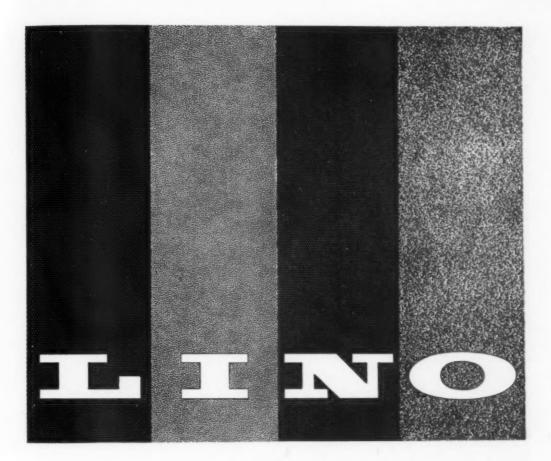
Rolls

ANY COMBINATION OF SIZE WIDTH OR PERFORATION

HUNT & COLLEYS LTD. SPECIALISTS IN THE MANUFACTURE OF PAPER ROLLS FOR INDUSTRY

HUCKNALL ROAD . NOTTINGHAM . TELEPHONE: 61088/9





Service Catesbys have laid line for sixty years. Service built upon the fruits of this experiencecomplete understanding and knowledge of the craft-is worth having. Only Catesbys can give it.

Staff Well laid lino gives longer, better service than lino laid indifferently. Catesbys send an expert and their own fully trained fitters to every contract. They ensure perfect line laying.

Advice Catesbys advice is impartial. They will recommend a certain type of lino only when lino is known to be the ideal floor covering. Catesbys will suggest the most suitable grade.

Stock It is always easier and quicker to choose and specify a design, colour and grade from lino in stock. At Catesbys you see lino in the piece-and you can choose from the biggest stock in Europe.



Contracts (Linoleum Division)

TOTTENHAM COURT ROAD, LONDON, W.1, MUSEUM 7777

By appointment to

Her Majesty the Queen

Suppliers of Dictograph Telephones





"I was sceptical at first—
Now I could never manage without Dictograph"
Alfred H. Dunhill CHAIRMAN OF ALFRED DUNHILL LTD.

"With DICTOGRAPH I am able to contact anyone in my organisation immediately"—"Could not manage without it"—"I feel when I sit here that I have the whole firm, throughout the world, under my control

INSTALLED IN THE NEW DUNHILL OFFICES AT 30 DUKE STREET, ST. JAMES'S, LONDON S.W.I, ARE DICTOGRAPH INTERNAL TELEPHONES, STAFF LOCATION AND TIME SYSTEMS

DICTOGRAPH TELEPHONES LTD.

200 ABBEY HOUSE, WESTMINSTER, LONDON, S.W.1.

27 BRANCHES THROUGHOUT THE UNITED KINGDOM AND IRELAND

ABBEY 5572-

Are exhibitions waste of money?

A short time ago I went to an industrial exhibition at Olympia and for the umpteenth time wondered what on earth influences otherwise hard-headed managements to waste their time and money on such events.

This, as it happened, was a very good exhibition. Displays were not crammed too closely together and firms had gone to a lot of trouble to display their products in a lively and imaginative manner.

The only thing wrong was the response, I got there at a time in the afternoon when even the expense account luncheons are over, yet it was with difficulty that one could detect any visitors. Most of the people I saw were bored men in lounge suits standing twiddling their thumbs while waiting for someone to come along and make some enquiry. Here and there, groups were in the tea bars or knocking back light ales.

That apart, there was nothing to suggest that the day in question was not a Sunday, and I should add that this was in fact the opening day.

All this leads me to speculate on whether our managements just couldn't care less about what is happening in their particular industry. Do they take the view that, so long as the business is making a profit, what need do they have of new ideas or to acquaint themselves with new products and processes? Or is it simply the old, old story that we in Britain just don't know how to put over this type of exhibition?

One thing is certain. On this particular occasion, as I have already

lot of money.

ROBERT MITCHELL

The Bishops, London N.2

Should job ads. be more detailed?

Job-seeking and job-filling would be a lot easier if employers would state in adverts, pay, location and perquisites like car, etc.

As a young executive seeking advancement I have often reached interview stage only to find that:

1-'High salary' turns out to be £200 above my present figure, but without a car. Naturally I consider this no attraction.

2-The location is in the north or west, while I could not at present consider moving out of the Home

Personnel managers should take a course in précis writing. When they draw up an advert, they should ask themselves if terms like 'light engineering' (in one case this meant a light foundry); 'good pension fund' (the conditions were not attractive to a young man); and 'excellent prospects' (every job seems to have these), mean anything at all.

The result would be a saving all round of time, money and temper.

ARTHUR IRVINE

Beckenham, Kent

These are no doubt important points, but many employers prefer to fit the salary to the man, when they have seen him. They like to give him Sevenoaks, Kent

stressed, a lot of firms were wasting a an advance on his present figure, to create a personal incentive. This is generally better than an absolute Civil Service type of grading.—ED.]

Managers: are they a healthy lot?

Businessmen are traditionally proud of their stomach peptic ulcers and cardiac troubles. No doubt many of them read with consternation the mortality figures issued recently by the Registrar-General, which seem to infer that managers are in the most healthy occupation group.

It is only fair, I feel, to reassure them on this score. The statistics prove nothing of the sort.

In the first place, there is a world of difference between mortality rates and the general level of health. In the second place, the statistics are obviously 'loaded.' It is not surprising that the highest mortality should be found in the 'unoccupied' group, which must include thousands of men who are chronically unfit to work. Nor is it surprising that the 'unskilled' group should be badly placed: this is simply a legacy of the unfortunate social conditions in the

Businessmen have a better chance of survival to retiring age because they can easily take time off when things go wrong, and because they can afford to spend more on medical treatment. But this does not mean that they are a healthy lot.

W.T.P.

Send Your Goods to Europe Faster, Safer

by William Guthrie

HE Continental countries are ordinary freight obviously goes much faster between the nexus of large towns in Western Europe than between them and Britain.

of any British exporter with his eye favour of the new services. on the European market; it often docks and dockers. No wonder, them to decide. then, that businessmen are casting about for other ways to get goods to Europe, ways that are faster or safer, nated.

There are three new ways: lorryvery different.

At first sight all are more expensive on each other's doorstep; than ordinary ship cargo. But mere movement is only a small part of the export story: packing, damage from various causes, pilfering, warehousing, FOB charges, dock dues, and Shakespeare's silver sea is the bane 'insurance' will often tip the scales in

Every firm must assess the respecmeans delay, damage, and bad will; tive advantages for themselves. The it means, above all, dependence on comparisons that follow will help

1. Transport Ferry

Converted tank landing ships and a where handling is reduced or eliminew specially built vessel provide three 'drive-on, drive-off' sailings a week from Tilbury to Antwerp ferry-same lorry; road-air-road; and (the journey takes about 18 hours). air all the way. All are booming, as The overwhelming advantage of this more and more firms realize their service is that goods arrive in the advantages. And their mushroom vehicle in which they were packed growth means that the transport at the factory. Growth is its most picture a few years from now may be compelling spokesman: traffic is four times last year's.



Up-to-date loading equipment is in use at airports to reduce delays and protect goods



Silver City's freight is four times up on last year. They sell space by the ton-which explains why they get loads like rubber soles, farm animals and bulk paint

Dock delays, damage, pilfering, the exporter's delivery promises broken. But new services are different . . . and they often cost much less.

Weight, for all practical purposes. does not matter. The only serious size limitation is headroom -12ft. 6in. on the old vessels, 14ft. on The scale of charges is strictly according to deck/hold space occupied, with a reasonable reduction for empty vehicles. For this reason, the service is used most by British Road Services and other hauliers, who have the prospect of a return load. But some companies send their own C licence vehicles. Comfortable accommodation is provided for their drivers.

B.R.S. were quick to see the ferry's great possibilities. They set up a special division to handle Continental traffic. They ordered a fleet of special detachable semi-trailers which are designed to give maximum capacity under the circumstances and are tamper-proof to comply with Customs requirements.

Semi-trailers cut the cost of the

service. They greatly reduce the amount of documentation for vehicles. Neither passport nor accommothough the advantage of one driver from door to door is lost.

taken off the ship to France, Benelux, and Western Germany under reciprocal agreements with international hauliers. They return to Antwerp with loads for Britain and tow them aboard. At Tilbury, B.R.S. and other hauliers tow them from the ship to their British destinations. Thus all loads at all times are in charge of drivers familiar with roads, language, and conditions. As the idea catches on, and more return loads are obtained, charges can be reduced. At present, bulbs from Holland are a common freight.

Speed of loading and unloading is almost as fast as the vehicles can be driven on and off. Payloads totalling

1,100 tons in 149 lorries have been loaded and unloaded in five hoursone tide. By conventional methods this might have taken three days, or longer. Special, easy-to-fix shackles anchor the vehicles by their wheels.

Pilfering is unknown; as soon as the last vehicle is loaded the holds are locked

Damage is rare. New transport ferries have stabilizers of the type fitted to the 'Queens'-the first ships to be fitted with stabilizers for the safety of the cargo rather than of the passengers.

Packaging need be no more elaborate than that required for a long road journey in Britain.

Contrast this with the damage sometimes sustained by ordinary sea cargo from buffeting in storms, from heat, damp, and stowage near other cargo.

Documents. All the customer need supply are invoices in triplicate plus a Bank of England form if the value is more than £500. If desired, B.R.S. can also clear Customs, through their agent.

Overseas Stocks Reduced. Dyestuffs Division of I.C.I., Blackley, Manchester, started to use the ferry early in 1957 for taking synthetic dyes to Rouen. German and Swiss competition is keen: prompt deliveries in perfect condition are essendation for drivers is required, al- tial. A trial run through a local haulier was satisfactory except for the mass of Customs documents that From Antwerp, B.R.S. loads are the mixed consignment required. Another load of 34 items, for Rotterdam, also required comprehensive documentation. However, these initial delays were largely due to Customs' inexperience of I.C.I.'s loads.

> Costs are greater than ordinary cargo boat: this is largely due to heavy charges made by the Port of London Authority simply for allowing the trailer to run on to the ship. But these costs are more than offset by gradual reduction of the stocks I.C.I. were forced to maintain at strategic points when deliveries were less reliable. I.C.I. are so impressed by the new service that other divisions are likely to use it too.

A striking example of the useful-



The speed of air transport means that European agents do not have to maintain large stocks. A cable to the factory in Britain brings goods in a day or two

ness of transport ferries was the Birmingham on Wednesday midday recent journey of a lorry carrying 10 tons of fir bark from Northern Ireland to Germany. The bark was for the trial run of a chipboard plant which is being delivered to a Northern Ireland company. The same lorry, with the load undisturbed, took the load the whole way. It used the Larne-Preston transport ferry and travelled across England to board the Tilbury ferry. It was the cheapest way the job could have been done.

The Star Aluminium Co., Wolverhampton, operate a regular delivery service of aluminium foil to a big Liége customer. The lorries bring back empty cases, making the round trip in three or four days, against three or four weeks.

Refrigerated cargo is safe on the ferry. Meat lorries regularly use it en route for Milan, taking back loads of fruit. A lead from the vehicle's refrigeration system is simply plugged into the ship's own supply.

Rush Jobs. Traffic is generally planned about one week in advance. but rush jobs are fairly common. B.R.S. can often uplift a load in and procedures.

and deliver in Antwerp on Friday.

Vokes Ltd., filtration and silencing engineers, Guildford, used the ferry service when they recently had to meet an urgent delivery date for an Italian customer. On June 20th they rang up the haulier, who reserved space on the transport ferry. Vokes completed the order on June 25th. Next day it was on the ferry; four days later it arrived by road in Italy.

Simpler Customs Needed

Customs difficulties are still a bogey for the uninitiated-and a nuisance to everyone. But for them, door-to-door transport would make Europe a home market for British industry.

The Institute of Shipping and Forwarding Agents have taken the initiative in trying to clear up the jungle of Customs documents. A standard form has been drawn up to replace the many in use. In co-operation with Government departments, a dummy run may take place next year with a view to simplifying regulations

2. Road-Air-Road

Silver City Airways operate a roadair-road service to the Continent using their planes as flying lorries, pure and simple. This accounts for several surprises. They handle far more freight (even excluding tourists) cars) than all other air services in Britain together; while other air services sell 'space' by the kilogram, they sell it by the ton-and preferably the five-ton; and the result is their cargoes include bulk paint, bulk meat, farm animals, refrigerators, cheese, butter, fruit, rubber soles, and other apparently un-air-worthy things.

The outstanding advantage they offer is door-to-door service at reasonable cost, coupled with an air Channel crossing which reduces the hours taken by ships to 17 minutes. A slight disadvantage is that all goods have to be manhandled-but damage is rare. Personnel are accustomed to dealing with motorists and their cars and luggage; they have a tradition of respect for everything entrusted to their care. Pilfering is unknown.

An order from, say, Oldham to Lyons or Dusseldorf, will be handled



With the Transport Ferry goods are delivered to the customer in the same lorry that the manufacturer packed them in. Manhandling, damage and dock-side delays are eliminated

carry it only 25 miles or so.

haulier who knows the customer's between Manchester and the Contiarea to take the order to their private nent. They experimented with Silver airfield at Ferryfield, Kent. There it City road-air and found that, for bulk is loaded on to one of the Bristol transport of spares for tractors and flying box-cars that make up to 200 implements to their Paris company, crossings a day. Customs clearance at Le Touquet or Calais is quick and £4 per ton in transport and packagsimple. Delay is unknown. Their private airfields have bonded warehouses where goods are locked till collected by arrangement. And the order is Silver City's responsibility till it reaches its destination.

For years Silver City have 'pushed' their freight service. Apart from tourist cars, the demand was at first very poor. But now they are starting to reap the reward. Traffic has quadrupled in the last year to 20,000 tons. They estimate they have only scratched the surface. A big expansion programme, including the installahandling equipment, is under way.

many major firms who have gone other costs like wharfage, port rates, at both ends of a journey.

whole way, although their planes Continental deliveries. When the Common Market became a possibi-Silver City arrange for a local lity they studied all forms of transport clusively by a member-firm of the the system saves a week in time and

> Warehouse-to-warehouse time for the 450-mile journey is 72 hours. Previously the spares went to Hull, then by sea to France. The whole journey took eight days but it was often another two before the goods were ready to be unpacked.

3. Air all the way

Air freight is by far the quickest, but on the face of it, the dearest, way to export. Why, then, are many large firms, producing heavy equipment, going over to it exclusively? tion of comprehensive materials The answer is that airlines like B.E.A. take as good care of freight as they

and insured through Silver City the over to road-air freight for their and FOB charges are considerably cheaper.

> A switch to air transport ex-Rubery Owen group was announced last January by Alfred Owen, chairman of the group. He added: "We have got to take the bull by the horns if there is going to be a European Common Market."

> So Easiclene Porcelain Enamel Ltd., Wolverhampton, makers of kitchen equipment, are using air freight for all their exports to Belgium, and considering it for other Continental markets. A. R. Tanner, the general manager, complained of damage formerly caused to sink units by the railways. At one time, he said, the railways were even packing their sink units for them and still they arrived damaged, although the special containers cost £3 each.

Some firms formerly used air freight only in an emergency; now emergency traffic is falling off and regular traffic taking its place. In other words, to experience its effido of their passengers. Packaging ciency and safety is to be converted, Massey-Ferguson are among the costs are eliminated or negligible; especially if an airport is convenient END

Better Management



Control with Mobile Radio

by George T. Rae

New sets are compact and fit easily under the dash.

growing number of firms are The Equipment installing two-way radio telephones. With these they pass messages to vehicles of all kinds, or control the operation of large equipment like cranes.

At present about 1,700 firms hold licences to operate a total of about 2,000 base (fixed) stations and 14,000 mobile stations. Many times their number could profitably use such equipment.

This does not mean that mobile radio is the answer to every delivery or sales problem. An ice-cream manufacturer installed radio in their delivery vans. Hearing of their increased sales, a smaller competitor put a set in one of his vans, so that orders telephoned to head office after the van had left, could be delivered before it returned to base. But the increase in sales was not up to expectations and the idea was abandoned.

Nevertheless two-way radio has tions, it is 15 to 30 miles. applications in every industry. Present installations include:

- -small fork trucks and tractors used for internal factory transport:
- -delivery vehicles on their rounds 20 miles or more from base:
- -accurate control of cranes lifting awkward loads in confined spaces.

An installation consists of one fixed transmitter-receiver at base, and any number of smaller mobile sets fitted in vehicles.

The base transmitter is generally controlled from the office of the transport manager or transport foreman, although the transmitter itself is often yards or even miles away. beside the aerial. The controlling unit is similar to a desk-top intercom. with an ordinary telephone handset.

Where all vehicles to be controlled are concentrated in a small area (like a factory covering a few acres) the aerial can generally be fixed to a high building or chimney. But where messages have to be passed to vehicles several miles from base, a tall mast (often on high ground) is the fear that mobile radio is innormally required. Maximum range. given the best conditions, is then 30 or 40 miles; under average condi-

It does not matter if the most suitable aerial site is several miles from from home and costing several the base station. They are easily connected by an ordinary telephone line rented from the G.P.O. Power range of less then a mile controlling for the transmitter is generally drawn from the mains but where necessary the transmitter can operate from lowvoltage batteries.

Mobile sets are basically the same as the base set, but of course are much smaller and of lower power. They draw current from the vehicle's own battery. The equipment is housed in one, two or three cabinets, the telephone handset, controls and loudspeaker always being mounted under the dash. An aerial rod a few feet long completes the set.

Two frequencies are used. The base station calls on one; the mobiles reply on another. The main reason for this is to reduce congestion and interference on the air. Another advantage is that no mobile can hear what another is saying unless special arrangements are made.

Many potential users are put off by ordinately expensive. This is not so. Cost depends on the size of the installation. At one end of the scale, there is a comprehensive installation controlling 50 vehicles up to 30 miles thousand pounds. At the other end of the scale there is a system with a two heavy mobile cranes and costing about £500.

Here is the sort of expenditure that can be expected:



guiding era





Radio control helps inter-shop transport[to operate at top efficiency at the M.O.S. ordnance factory, Barnbow.

Two-way radio gives complete control over vehicle movements. These examples show how time is saved, vehicle wear reduced and 'dead mileage' eliminated.

Base transmitter		£175
Installation		£25
Base aerial and mast	(if	
required)		£100
Plant material		£100
Installation		£5
Licence, per year		£3

To this can be added the cost of renting a telephone line. But the total can be reduced if the user does some or all of the installation work himself, although the set manufacturers do not advise this.

Quicker Deliveries

Marconi mobile radio has enabled Elders and Fyffes Ltd., banana importers and distributors, of London, to improve their service to customers. reduce vehicle mileage, and save drivers' time.

Bananas are sold direct to retail fruiterers by Elders and Fyffes' salesmen driving vans on daily rounds, within a radius of 8-10 miles of central London. They are based on a large depot at Somers Town, North London

Bananas, like fruit in general, are a fluctuating trade, and demand is difficult to forecast. A cold, wet day may depress trade, but even a slight rise in temperature may make retailers ring up for extra supplies.

If a retailer sees that he is running

low he has only to ring up the Elders to the van salesman who normally supplies him and he receives his order with a minimum of delay.

In the days 'before radio', a retailer had to place his emergency order, and wait till a salesman returned to depot to get the message, and then come out to supply him. This meant extra work for the driver, more vehiclemiles, and often a loss of potential sales for the retailer.

Radio enables drivers to give customers up-to-the-minute service, build up considerable personal goodwill-and increase sales. Now customers often telephone orders where previously they would not have bothered because of the delivery

Radio is equally helpful to the depot manager. Bananas are imported in the green condition and stored at Somers Town in special compartments where they are ripened according to requirements.

By keeping a check on the telephoned orders from customers, the manager gets an up-to-the-minute picture of demand over the depot's entire service area. He can then draw up an optimum ripening

The company experimented at first and Fyffes depot. His order is passed by putting radio in only four of their vehicles and eventually extended this to a total of 12 mobiles based on Somers Town. The scheme was so successful that Elders and Fyffes then decided to install radio control at their Goodmayes, Essex, depot, which operates eight vehicles.

> Their London depot shares an aerial mast at Highgate with several other London firms. This is because a mast on high ground is essential for wide coverage, and in the London area there are not enough sites to go round.

> An additional expense for the company was the purchase of a battery charger. Although small mobile sets do not draw a heavy current from the vehicle's battery, the drain is continuous. Where a vehicle covers many miles a day the battery is soon re-charged. But the banana vans' work is mostly stopstart, so that the battery often needs replenishment at the end of the day.

Reduces Dock Delays

United Carriers Ltd., Victoria, London, use only seven mobile radio sets to control the movement of hundreds of vehicles, giving a greatly

Continued on page 118

Home-made Films Show Workers How

by Peter Spooner

A well-known shoe
manufacturers make
inexpensive films to
train their employees
by analytical methods.
Many smaller firms
could do this.

A LTHOUGH many companies have found that the motion picture is a valuable training aid, others think that it is too inflexible to serve them—except, perhaps, in a very casual way. This is an understandable point of view but it is often wrong.

The biggest mistake is to regard the film as a self-contained method of instruction which neatly fills a gap in an established programme, gives the instructor 'a breather' or (more euphemistically) 'varies the pace for the students'. Of course it is sometimes made to do these things, but it does none of them well enough to justify the expense.

The only companies which really benefit from industrial training films are those which use them with as much skill as they use other visual aids.

Companies which don't use films at all often claim that it is difficult or impossible to find ready-made subjects which meet their requirements. Whether this is fully justified depends on the type of business. Professional film production is expensive, and sponsors are naturally attracted to subjects which cater for large audiences; consequently some industries are served better than others. For the



Shooting a scene at Clarks. The cost of filming generally compares favourably with that of other visual aids

same reason professionally-made Case History training films usually deal in generalities.

On the other hand, the choice of subjects is better than many businessmen imagine. It is also growing steadily. Today there are some good films on most topics-if the prospective user is prepared to winkle them out.

The real problem is in finding suitable material for direct training. Different firms have different needs, and it is not often that an off-the-peg production meets these exactly. But in such cases there is always a chance that a company can fill the gap by making its own training films.

Too expensive? Too complicated? The sort of activity which has to be left to a few industrial giants? It factories in the vicinity of Street and a depends on what you mean by a 'training film'. Clearly there is a definite limit to the number of firms which can afford to make or sponsor lavish productions for internal use only. But a training film doesn't have to be lavish. In its simplest form it may consist of a short strip of anima- and manipulative skill; moreover, specific groups, and short appreciated pictures-a 'blackboard' demon- many of the raw materials of shoe- tion courses (with a teaching content) stration of a process or activity which making are animal products which for the highest levels. cannot be mocked up in the classroom or satisfactorily observed in

Making this type of film is within the capabilities of most firms which have recognized the value of putting their operator and supervisor training on a systematic basis. Here is a casehistory example. Admittedly it concerns a fairly big company; but many of its features could be copied successfully by smaller organizations.

C. and J. Clark Ltd., shoe manufacturers, Street, Somerset, began to make training films-on a carefully restricted scale-about two years ago. They did so because they had found that few of the ready-made subjects dealt with their type of industry, or, more important, suited their methods of instruction.

The company have over a dozen few elsewhere. Each is virtually a self-contained unit employing about 300 workers and producing a specific range of footwear. Although mechanization has been developed as far as spared for long periods get a course possible, the work still involves a of three separate weeks. There are larger proportion of craftsmanship also 'shot in the arm' courses for vary from piece to piece and have to be used with discretion. For Clarks, their own school adjacent to the main therefore, the training of operators works, but from time to time 'verti-

and supervisors is a very important business activity.

Their system is extremely progressive. Much use is made of analytical methods, developed by their own training department. This means that workshop operations are broken down into 'component skills' which are not co-ordinated by the trainee until he or she has mastered them separately. In addition, all recruits undergo a delayed induction course when they have had two or three months in which to lose the first sensations of strangeness and are thus in a more receptive state than at the beginning of their employment. This consists of five consecutive afternoon sessions.

For their supervisors, training is intensive and practically continuous. They are given a basic three-week course, followed by one-week 'refreshers' at intervals of about six months; senior people who cannot be

Much of the training is done in

cal' programmes are set up at individual factories. At these courses all levels of supervision from a factory work to build a common day-to-day operating policy, and an understanding of each other's difficulties.

This resumé of Clarks' training policy is important because the company regard their films purely and simply as teaching aids-to be integrated with other methods, and not superimposed on them.

In 1956 Clarks already had a small, part-time film unit. Run by the photographic department, this concentrated on a very specialized branch of do-it-yourself film-making: the recording of operations for work study analysis. When the new venture started, the unit was promptly brought under the direct control of the training department.

Significantly, it is still part-time, whereas the visual aids section to which it belongs, is full-time. In other words, the people concerned with it have a definite training responsibility, and not a film-making responsibility. This ensures that the potential value of films on specific elements of the training programme is weighed objectively against the possibility of using less glamorous methods which are generally cheaper and sometimes more suitable.

The only full-time member of the visual aids section is an artistcameraman. In the production of films or filmstrips, he is assisted by two part-time members and also by the company's still photographer. Planning and supervision is by an informal committee, which consists of the training officer (in the chair), the cameraman, the head of the department immediately concerned with the training content of the proposed film, and a member of the administration staff who has had experience of personnel work.

Clarks never spend time and money on making films for the sake of it. During the past two years they have used the medium in various ways. Here are some examples of the flexibility which they have achieved.

Safety training. The unit's first major production (after a couple of 'dummy runs') was a 20-minute film

on accident prevention. This was to make bigger, better and more excertainly designed to fill a gap in the pensive productions. Much of the material available from other sources, for these dealt almost exclusively with heavy industry and thus made little impression on C. and J. Clark employees.

The film showed typical hazards in the company's own factories. It was photographed on 16mm. Kodachrome, and commentary and effects were recorded by the inexpensive magnetic stripe system, which enables a post-synchronized soundtrack to be added to a projection film without laboratory work.

For the members of the unit it was something of a training exercise. Inevitably they made mistakes and introduced a few 'clever' effects which they now regret. But the film was good. At least the employees were impressed by it and the instructors thought that it did a good teaching job. Their response convinced the product was immeasurably superior to the more polished professional films on the same theme.

The safety film is now used by the safety officer in his part of the induction course. It also figures in other training programmes. Altogether, more than 3,000 employees have seen it.

cost per member of the audience is, only a few shillings; therefore it can so far, about one shilling-less than the film. Moreover the subject library of loops is continually turning to have a working life of many years. processes.

Animated blackboard. The response to the safety film showed the partment sometimes use motion picunit that it was working on the right tures to 'sell' their own services. For

unit's output since then has been 'blackboard-and-duster' materialshort inexpensive records which are simply thrown on to the screen to illustrate specific points during lectures and demonstrations.

Into this category falls a series of continuous loop films, designed primarily to give supervisors a better appreciation of different manufacturing processes. Each is about 10ft, in length and normally consists of four shots: (1) a close-up of the shoe before processing takes place; (2) the machine on which the operation is done; (3) the operation in progress; and (4) a close-up of the shoe afterwards. This material is photographed at 24 frames per second but projected at 16 frames per second, thus slightly slowing down the movements to help the audience to comprehend them.

The loop system enables the 25training department that the local second cycle of shots to be repeated several times without having to rewind the film and re-thread the projector. For this purpose, the training department use a loopsupporting device which they have constructed themselves (although professionally-made attachments are, of course, available).

To photograph one of these films The total cost was £150. Thus the takes about half-an-hour and costs be discarded without compunction as the employee's wages during the soon as it has served its purpose. In period that he is actually watching fact, the training department's small matter and treatment are such that over as the factories introduce new the film can reasonably be expected styles of shoe and new workshop

Internal selling. The training delines. But this did not result in a rush example, they have acquired a copy

In its simplest form a training film consists of a short strip of animated pictures-a 'blackboard' demonstration of a process or activity which cannot be mocked up in the classroom or satisfactorily observed in situ





Films are realistically regarded as just one part of a comprehensive selection and training programme. Left: An instructor watching a student trainee. Right: Testing the sensitivity of touch of an applicant.

the training of paratroops by analytical methods. This is being paired with a short home-made film on Clarks' own analytical methods. The aim is to show the fundamental similarity between the two approaches-and thus help to persuade supervisors that the department's 'new-fangled ideas' have in fact been tried and proved in other fields.

Research into training. The real purpose of a film is to improve, rather than to supersede other methods of instruction and communication. In one application, Clarks pick up the training operation before it even gets into the classroom. This involves the recording and analysis of fast-moving processes-not for the purpose of conventional work study but to isolate the job components on which the analytical system is based.

Not a lot of filming has been done in this field but the training department feel that the technique offers big possibilities and hope therefore to use it more extensively.

Visual reports. Motion picture sequences are sometimes mixed with film-strips or slides, to exploit the virtues of both media in an economical way. When the chairman gave his annual report to the senior staff this year, the training department prepared a visual report to accompany unit also handles jobs for other de-

of a four-minute professional film on it. The chairman's speech was then partments. During the past two years recorded on magnetic tape, enabling the whole programme to be 'road shown' to employees at different factories.

> Historical records. 'Real' films are made as and when the demand for them is enough to justify the trouble and expense of diverting the visual aids section from other activities. For example, plans are now made to compile a film on the history of the company. This will be used during the induction course.

> The film unit also records subjects for the company's 'archives'. Two events which have been featured in self-contained sound films are the opening of a new retail store and the inauguration of a C. and J. Clark factory at Plymouth.

> Company cinema. The films are mostly shown in a 100-seat cinema at the training school. Designed by the visual aids section, this is attractive but functional. The screen is mounted at the back of a rostrum used for lectures and demonstrations.

> During the winter months, the department put on evening shows at individual factories. The programme usually consists of four or five short training films-home-made and borrowed from industrial film libraries. Attendance, of course, is voluntary.

> 'Sponsored' productions. The film

it has exposed between 2,000ft. and 3,000ft. of black-and-white film on work study subjects; the work study engineers analyse this material themselves on the unit's animated viewer, normally used for editing.

More ambitious assignments include the production of sales promotion films dealing with the equipment made and distributed to other shoe manufacturers at home and abroad by C. and J. Clark's associated engineering companies.

Costs. To provide realistic quotations for films sponsored by the associated companies, the unit has had carefully to investigate its preduction costs. This has revealed that a fair working figure—taking into account materials, direct labour, and an allowance for overheads-is £30 per 100ft. of colour film with postsynchronized soundtrack on magnetic stripe. At 16 frames per second, the speed normally used for internal training films, 100ft, represents a running time of four minutes.

The silent demonstration films are, of course, much cheaper. Generally the cost compares favourably with that of other visual aids.

To equip the unit with a 16mm. camera, lighting units, editing equipment and optical/magnetic sound projector cost appreciably less than END



High pressures, rigid presses and meticulous attention to lubrication are essential. Pera installed this 1000-ton press for their research on impact extrusion

IMPACT

by George T. Rae

A new technique, suitable for long or short-run work, produces in seconds components that might otherwise take minutes or hours

SLUG of cold metal is placed in a press; a punch forces the slug against a die; and the pressure causes the metal, still cold, to 'flow' around the punch or die, following its outlines exactly.

The process takes about a second. It is what the production engineer calls impact extrusion—other names are cold extrusion, cold flow pressing or cold forging.

About the process itself there is nothing new: manufacturers of toothpaste tubes have been using it for 100 years to shape soft metals like lead and aluminium. But what is very new, especially in Britain, is its application to harder metals like copper and steel. This calls for pressures up to 1,000 or more tons per square inch, powerful rigid presses, and punches and dies of exceptionally tough material. These have only recently become available but already one or two firms in this country are experimenting with them. gaining production know-how, and will soon be stealing a march on competitors.

That is why no firm which produ-

BUSINESS

EXTRUSION Does 100 Jobs

ces or buys large numbers of small components, that are pressed, turned, milled, or ground, can afford to ignore the implications of impact extrusion.

Products

Small components that must conform to close tolerances are ideal for production by impact extrusion. Examples are bolts, screws, rivets, cups for needle bearings, ball races, and many specialized components in the vehicle industry. Outstanding in this field are gudgeon pins-which fix pistons to connecting rods. These are required by the hundred thousand and American manufacturers, after experimenting with impact extrusion, are expected soon to manufacture them exclusively by this method. Other examples are the injectors on diesel fuel pumps and commutator bushings for electric motors.

But the technique is not confined to small components. As it becomes accepted and experience grows, it will undoubtedly cope with products of sizes at present thought impracticable.

Research

Research into the impact extrusion of harder metals began in Germany 20 or 30 years ago and it is now an established production process there. It was later taken up in the United States but was virtually ignored in Britain. Now, however, the Production Engineering Research Association are making up some of the leeway by doing extensive research on behalf of member firms at their Melton Mowbray laboratories. Pera know that the application of impact extrusion in British factories would be far wider today if firms knew more about it. They are largely ignorant of its capabilities or lack sufficiently authoritative data to embark on the design of punches and dies in the new materials that are essential.

Advantages

What, then, are these capabilities? The following is a short summary: Speed. Production speed is approximately one component for each stroke satility is its forte. All that is required of the press-and that can be one a second, or even quicker. The deci- size of the press and pressure it ding factor is generally the extent to exerts are the only limitations. For

which wall thickness has to be reduced-in other words, the amount by which the wall of the component is smaller than the diameter of the slug. To give an obvious example, a component of wall thickness of 0.05in. could be extruded more easily and quickly from a slug 0.5in. in diameter than could a component with a wall thickness of 0.005in. As the wall thickness reduces, pressures required increase and production speed drops for a given quality of article.

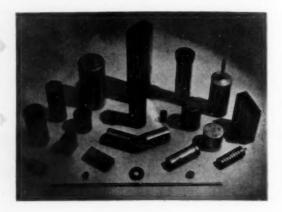
Versatility. Impact extrusion is in complete accord with the modern trend towards flexibility in the production line. Special-purpose automatics are all very well-so long as the pieces they turn out do not have to be re-designed. They can, however, be a liability at the present time when research, invention and development make designs out-of-date sometimes before they are in production.

Impact extrusion is different. Veris to change the punch or die. The

PROSPECT



Versatility is one of the chief advantages of the process. A wide range of extrusions can be made on a single press



this reason too, the technique is practicable for short or long run work, making it attractive to the smaller firm.

Saves Machining. Impact extrusion puts metal only where it is wanted, so there is no machining—no skilled operators, no expensive machines to set up, no cutters to replace, no workhardening. All that is needed is an operator or inspector who can tell by looking at the product whether the tools (punch or die) need adjustment or replacement, or whether the lubricant is failing. Some conventional pressing operations - deep drawing-are done in several stages, with annealing in between each stage. This is necessary to prevent bursting and tearing of the metal. But with impact extrusion all forces are compressive: the metal must go where it is squeezed, so the operation can be done in one stroke.

Saves Material. The volume of metal in an extrusion is the same as that of the slug it was made from-waste is impossible. Scrap, too, is virtually eliminated, because accuracy is built into the process. The component must be exactly right, every time. The only exception would be tool failure; experience and maintenance are the answers to that. Thus, the advantage of less inspection is thrown in for good measure.

Better Product. The fatigue strength

The flowing of the metal under pres-skilled operator. sure, following the contours exactly, gives it a better grain structure, so lower grades of steel than normal can be used.

Lower Costs. An American car firm reckoned that by going over to impact extrusion they could save between 30 and 40 per cent on component costs.

The Equipment

Impact extrusion can be carried out on practically any type of press. But unless it has been specially built for the job results are likely to be disappointing and misleading. For instance, vibration and twisting of the frame can be tolerated for most types of pressing; with impact extrusion it will at best make an inaccurate product-at worst, it will break the

Special extrusion presses giving pressures up to 1,000 tons per sq. in. are now available in Britain. Tools are of cemented carbide and exceptionally tough, giving long life even when used for extruding steel. Special steps are taken to eliminate vibration and twisting. For mass production, automatic loading and unloading can be arranged. Ejection of the component from the tools is always automatic by means of compressed air, compound dies, or specially shaped punches, according to the product.

that produced by machining methods, attended by an unskilled or semi-

The tools are all-important. According to their design the product can be forward-extruded (in and around the die), backward-extruded (around the punch) or both, so that the most complicated shapes can be achieved.

Designers must be given time to assimilate impact extrusion and its implications. Most have grown up in an environment of metal-cutting and need time to get used to the idea of forming without cutting-to the possibilities and limitations of the new process. Often a product can be redesigned to make it easier to extrude without affecting performance.

The Slug

The better and more precise the slug, the better the product. It is cut carefully from bar stock and fully annealed to get rid of local workhardening.

Lubrication is paramount. Contact between slug and punch or die causes seizure and breakdown. Special steps are therefore taken to treat the slug so that it holds the maximum amount of lubricant. It receives one of the proprietary phosphating treatments like 'Bonderizing,' which etch away the top surface. The resultant tiny pores are excellent for retaining of the product is generally better than The result is that the machine can be a boundary layer of lubricant. "END A company which had never previously sold to Poland took a stand at an industrial fair. Here is the sales picture they drew



The London dock strike set a transport problem for Rockweld. But Guy Motors, who were also exhibiting, came to their aid by taking the Autopak on one of their vehicles, which used the Transport Ferry Service

SELLING TO POLAND WHAT ARE THE CHANCES?

by Paul Steel

ANY producers of capital goods are attracted by the idea of selling behind the Iron Curtain. The market is there -practically every member of the Eastern European bloc is crying out for plant of various kinds. But the complications-language, long journeys, freight, and payments difficulties, not to mention embargo lists-generally deter them even from making the effort.

But they did not deter Rockweld Ltd., of Croydon, makers of welding equipment, electrodes, and accessories. They saw the Poznan Fair, held in June this year, as an opportunity to have a quick look at the market in Poland, the largest of the satellite countries.

They took stand space to demonstrate their latest welding machine, the Autopak. Although Rockweld come third in their industry in this country. they are by no means an industrial

sales manager, Alfred Fielder, whose mission was to report on sales pros-British sales executive who sees Eastern Europe as an additional market.

The Product

The product must be right for the economic conditions in the country. In the case of Rockweld, the Autopak is just right. It is a multi-purpose, automatic submerged-arc, welding machine. Price is made more attractive by dispensing with the electronic control used on more expensive plant, and substituting simple, robust control gear. It is suitable for long welding runs but can quickly be adapted for manual welding on specials, such as might be required in a jobbing shop.

Finance

Poland and all importing is done on

giant. So the experience of their a priority basis, through Government agencies. These agencies are allocated currency by the Finance pects in Poland, is of interest to every Department and draw up an import programme based, broadly, on recommendations from technical experts.

> Each industry in Poland has independent technical advisers whose job is to ensure that it keeps abreast with developments. At exhibitions they wear special badges, so all exhibitors try to impress them.

Language

This was not a serious problem Mr. Fielder was always able to make himself understood in English. And at the Fair itself there was an excellent interpreter service which made even the most technical conversations possible.

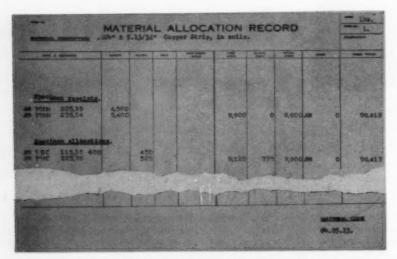
Hard Bargainers

Through the interpreter, Mr. Field-Sterling is extremely scarce in er spoke at length with businessmen

Continued on page 127

One machine gives them

Accurate Stock Control



Because of the automatic checking features in their system, the material control department know that the balance shown on every record card is accurate

trol Department at Coop-Mechanical Joints Ltd., Slough, recently completed an exhaustive survey of raw material stocks and stock records, the department manager found some surprises. The company had built up excessive stocks of several materials, and in one instance, an accumulated copper surplus, worth several thousands of pounds, lay idle in the stores, whilst the record cards blandly indicated that there were only sufficient stocks for production needs. Coopers have now reorganized their system of

substantial gains.

Coopers manufacture gaskets for the motor and other industries, supplying a range of some 40,000 differ-

by Peter Lewis

ent types. As new engines are developed, new types of gaskets are continually coming off the production line, whilst the company continue to manufacture gaskets as spares for the older types of engines.

Gaskets are made from a wide

HEN the Material Con- stock control and this has produced range of materials—many types of steel, copper, brass and also soft materials like asbestos, papers and

Materials come into the unloading bay in a wide variety of dimensions; a roll of steel strip may be 24in. wide whereas the strip from which the gaskets will eventually have to be cut may be anything from 5in. to 11in. wide. Further, the raw materials are required in many different thicknesses. Consequently the company needs to do two things:

1-Keep check of the numerous categories of materials coming into

of 7,000 Items

A new system avoids:

- WRONG ENTRIES ON STOCK CARDS
- RIGHT ENTRIES ON WRONG CARDS
- NO ENTRY OF ISSUES AT ALL

duction floors. This is the job of the not possible to carry comprehensive has to watch over 7,000 items of raw between ordering and taking delivery

material-for instance, metal strip the company has to stockpile suffimust be cut to give a maximum number of gaskets with minimum material quick manufacture and delivery to wastage.

Obviously both jobs can only be done satisfactorily if there is an efficient system of control. Accurate duction, and too high stocks. stock control is crucial for production, too. Gasket production is storage area, the Material Control geared to orders received as, owing Department enter the new stocks on

the factory and then on to the pro- to the wide range of products, it is Material Control Department which stocks. Yet because of the time lag of raw materials (a special steel may 2-Make the best possible use of take up to 6 months to be delivered) cient raw materials to guarantee customers. Management have, therefore, to keep a balance between too low stocks, which might disrupt pro-

When raw materials arrive in the

material allocation record cards. As orders flow in for gaskets the Planning Department decide what materials are required, then Material Control allocate stocks from their record cards. The storage area receives its instructions on an 'internal order form' and this is returned to Material Control to enable them to record as 'issued' stocks that had previously been allocated.

This is where the first snag appeared with the old system, as sometimes order forms were not returned to Material Control. Materials marked up as allocated were never recorded as issued, and this threw the cards out. Far too many allocations were being made each day for anyone to remember which order forms failed to return from the Stores.

There were other flaws in the old stock control system. Entries on record cards were done on desk bookkeeping machines. An operator took a card to enter allocations of stock, or the arrival of a new batch of materials, and she had naturally to pick up on her machine the old balances and register them. There was no guarantee that she did this correctly, and there was no easy way of checking.

Further, there was no means of checking whether the operator made her entry on the correct card. When handling several hundred cards a day, it was a simple mistake to make an entry on the wrong one. The obvious conclusion was that the record

cards could not always be relied upon to give accurate information.

Once Material Control had uncovered the weak spots of the system they set to work to find an improved method. Several months' investigation of alternative systems and equipment produced the present control scheme.

When Coopers now receive an order, a set procedure is followed:

1—The order details are transferred on to a card which takes the customer's name and order number, the type and quantity of gasket required and the date. The card is given a job number, a week number for production is allocated, and a precedent number indicating when the raw material is to be prepared for issue to the production floor.

2—An internal order form is produced which gives, in addition to the week numbers, the material or materials to be used, specifying the type, quality etc., and the size and weight of raw material for each hundred gaskets. This form also includes stores instructions—the best way to cut the material, the number of gaskets each sheet of material will give, and an estimate, both by weight and area, of the quantity of material required.

3—This is then passed to Material Control and the controller checks his stocks of that particular material. The controller makes the allocation by writing on the internal order form the code number of the selected material.

A system of coding was devised whereby each of the 7,000 materials was given a different six figure code—for example, copper .010in. thick by 6¾in. wide would be coded as 10 for thickness, 06 for width in inches, 12 for fractional width in ½in.—the final code for this item being 10.06.12.

4—The internal order next goes to an operator working a Burroughs Sensimatic machine. She has to print on the record cards the allocations decided on. First, she taps out on her keyboard the code number the controller wrote on the internal

order; the digits are 'held' by the machine and only print when a motor bar is depressed. She then reads the materials description on the order form and selects the record card with the same description typed at the top of the card. She taps out the balances of actual stocks (she reads this on the card), and a check figure.

The check figure is required for the check figure proof, a feature of the machine that gives a foolproof assurance that old balances are picked up correctly, and that an entry is being made on the right card. In the first instance a check figure is calculated by adding together the card's code number, the allocated stock, the free stock and the accumulated usage figure. Whenever a posting is made, all the figures which the operator has tapped out are added together by the machine internally and then subtracted from the check figure. If the result is zero, the carriage of the machine will open to take the card and will print when the motor bar is depressed. Otherwise, the machine will clear itself of all figures as an error in posting or card selection will have been made.

When the material allocations are completed the order form is dispatched to the stores where materials are cut and prepared for the production departments. After issuing materials, the stores enter on the order form the actual amount of material issued and return it to Material Control.

A material issue may differ from the amount allocated for several reasons—thickness and density vary with materials; again some materials, like asbestos, absorb moisture and thus increase in weight.

When the machine operator posts the issue on to the stock card, using the same check proof system, the differences between the amounts allocated and actually issued appear in a separate column, in red if over issued, black if under issued. An occasional small figure in red in this column is not normally worrying, but a persistent set of 'over issued' figures needs to be looked into.

To prevent the system being sabotaged in the event of an order being mislaid—as happened with the old system—Coopers have devised a check on order forms returning to Material Control. At the point of allocation, the Sensimatic machine prints a serial number on the order form. This number is reproduced on a proof tape running off the machine, and as the order forms are returned from the stores they are compared with the proof tape. Orders which fail to reappear are promptly queried.

Coopers' new system of stock control involved buying a machine which at present handles between 600 and 700 postings a day. Previously this work was done by two operators on small desk machines and a third person making entries by hand; now two girls take turns to prepare cards and operate the one machine. This produced lower running costs. However, Coopers were primarily concerned to achieve effective control of their material stocks, as this in itself, has produced considerable savings.

The Sensimatic machine is used to do four separate jobs:

- 1—Posting receipts of new material coming into the stores.
- 2—Posting allocations of material for production work.
- 3—Posting issues made by the stores to production shops and at the same time checking their estimated material costs by intelligent use of the over/under issue columns on the stock cards.
- 4—Posting stock check results. (Once a year a physical check is made and the result is printed on to the cards.)

Apart from the saving in labour costs and the effective control of stocks, the Material Control Manager has also the assurance that the balances shown on every one of his stock record cards is accurate. By contrast, when transferring the stock balances to the new machine in May 1957, the check figure proof system did, in fact, show that the balances on three per cent of the old record cards were incorrect.



TIME ON THE JOB

Eliminate written records of job time—often inaccurate and difficult to decipher

INTERNATIONAL ELECTRIC JOB TIME RECORDERS

print correct date, hour and minute on cards of any size or shape

Quickly registered, easily read, the figures provide instantly available Job Cost data

Flexible and accurate, this efficient method of timing the job inspires confidence and increases productivity

Recorders operate independently on time-controlled A.C. mains supply or on the

INTERNATIONAL SUPERELECTRIC MASTER CLOCK TIME SYSTEM

with the exclusive feature of AUTOMATIC SUPERVISION

Cash or rental terms

Ask for booklet J.705/1 "The Time Element in Costing"
—sent without cost or obligation

IBM UNITED KINGDOM LTD., International Time Recording Division 8 Berkeley Square, London W.1 Telephone: MAYfair 2004

and at Birmingham, Glasgow, Manchester, Leeds, Sheffield, Liverpool, Newcastle-upon-Tyne, Bristol

FACTORIES: LONDON and GREENOCK



INTERNATIONAL TIME RECORDERS

INTERNATIONAL TIME RECORDING : DATA PROCESSING : ELECTRIC TYPEWRITERS



MANAGEMENT AT WORK

IDEAS AND ACTIONS OF PROGRESSIVE FIRMS

They see how the other half work

SUPERVISORS from main production departments of Coopers Mechanical Joints, gasket manufacturers, Slough, were recently briefed on office routines. To promote co-operation among their staff, and help them understand what the other fellow is doing, the company arranged a series of visits to their offices. Fourteen supervisors spent several days, devoting a day every two weeks, working with office personnel.

Each man spent a day in the sales, progress, planning, material control and purchasing departments. Department managers explained the organization of their departments, how their work fitted in with the requirements of the company as a whole. Then supervisors helped department staffs in their work, and discussed with them how their respective jobs were linked.

Next stage in the programme was to set aside a full day for a supervisor to take a customer's order from the morning mail and personally see it through the office procedure. This involved costing the job in terms of materials, labour, etc., checking blueprints with production records, making out an internal production order, and checking on available raw materials. Then the supervisor acknowledged receipt of the customer's order and quoted for price delivery.

Results of this programme:

- 1—Supervisors now appreciate the amount and variety of work required prior to actual production.
- 2—Closer working between production and office departments has been achieved.

Smaller gap, warmer building

LOADING or unloading lorries at the works of Coburn Engineers Ltd., Guildford, previously accounted for loss of heat—pushing back tall doors was like removing a wall from the loading shed.

A 'double' double-door system was the solution.

As the picture shows, there are four doors, two on top and two underneath. When workers or small

SEPTEMBER, 1958



trucks enter or leave the building only the bottom doors are opened. When large lorries enter, all four doors are used.

Total height of the doors is about 14ft. No draughts come through the top doors, as they will not open unless the bottom doors are opened. The gear which carries the doors has been designed for easy operation, very little effort being required to slide them open.

How to make intelligent use of competition

Two TRADE ASSOCIATIONS have recently launched schemes to provide member firms with inter-firm cost comparisons. A great many industries on the continent and in the U.S. have been operating similar schemes for several years, but the idea has so far received little attention in the U.K., save from a few organizations.

One U.K. example, Satra (the British Boot, Shoe and Allied Trades Research Association) has been running a comparison scheme for over 10 years, though

here the accent has been on output figures (see Business article on Satra, April 1957.)

The management ratio scheme of the British Federation of Master Printers will give a member firm the opportunity to gauge efficiency and success by comparing trading results with averages for groups of similar firms in the industry.

Scheme uses a basic ratio—the return obtained on capital-which will indicate, relative to other firms, how efficiently capital is employed. Subsequent ratios



COMPANY SHARES FOR ALL

"Fellow shareholders" is a novel way to address a meeting of employees, but this was how Bernard J. Nicholson, Chairman of Jenson and Nicholson Group Ltd., opened his remarks recently, just prior to the company's annual meeting. What lies behind this?

lies behind this?

The company run a bonus scheme that makes employees of at least two years standing shareholders in the company. Geared to the annual dividend paid out, employee bonuses, which are calculated as a percentage of gross wages, are paid to the scheme's trustees. They buy ordinary shares on the open market and then pass on the share certificates to employees. For example, from the 20 per cent gross dividend announced for last year, an employee earning £500 a year would get a 4 per cent bonus—i.e. roughly £20 worth of shares. Company report that \$2 per cent of all employees who have received shares have kept them and not sold out.

may show up possible faults in the structure of a business, which cause unsatisfactory profitability.

The National Association of Corn and Agricultural Merchants provide a management statistical service. The Association, who count 2,500 firms as members. provide the service on a subscription basis. Subscribing firms send in cost details of office, sales, mill and transport operations, and information about the extent and type of credit, make-up of personnel, and type of mill equipment and transport vehicles used.

Firms are classified into four main organizational groups and standard costs and other statistics are calculated from the returns.

Staff choose office decorations

RECENTLY EVERYONE from typist to senior executive had the opportunity to choose their own decor for their

MANAGEMENT AT WORK

individual offices at the new factory of Aeropreen Products Ltd., High Wycombe, Bucks.

Managing director Davies Millar believes not enough attention is paid to the conditions people work under and this was one suggestion to counter this.

Mr. Millar's wife, artist and former industrial designer, helped the staff to choose schemes. She asked the staff what colours they would like to live with, and from their answers provided a selection of colour schemes from which they could choose. Where two or more people shared an office they were asked to agree on a joint design.

The company reports to employees

"To get results, we must have co-operation . . . you don't get real co-operation from people who do not care, which is apt to become the reaction of people . . . kept in the dark. Indifference goes hand in hand with ignorance." This is the logic behind a financial report that the Educational Supply Association Ltd. sent out to their employees.

The report, which is to become a regular feature, gives a break-down of income and expenditure figures, explanatory notes, charts and photographs, and a short article on E.S.A.'s overseas activities.

Designed and produced by Newman Neame Ltd., the booklet is readable and easy to understand; for example, under income and expenditure, such headings as 'we paid out or provided for' are a welcome relief from accounting terminology.

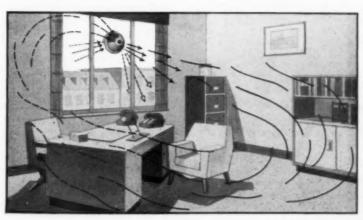
They found untapped talent

As a result of considerable expansion, an American company, Orr and Sembower Inc., wanted to fill management vacancies from within to reduce training costs and boost morale. So the company organized a talent search.

All employees were invited to co-operate and 80 out of 450 employees took up the invitation. An outside consultant was called in to work with the personnel department, and applicants underwent a battery of ability, aptitude and personality tests.

Search revealed that 38 out of the 80 volunteers had greater ability than their present jobs required. Consequently, several of these have been promoted, and others have been put on a promotion waiting list as 'immediate promotables.' Also the scheme has helped to publicize the firm's policy of promotion from within.

COLT FAN extracts stale air AND brings in fresh air* at the same time



* Warmed or cool, and filtered—as you wish

Proper ventilation necessitates the removal of foul air and its constant replacement by fresh air.

Only the Colt Two-Way Fan simultaneously fulfils this two-fold requirement. The incoming fresh air can be warmed or cool, and filtered—as you wish.

Write for descriptive booklet to Dept. 0102/9

COLT VENTILATION LIMITED . SURBITON . SURBEY . Tel: ELMbridge 0161 (10 lines)

-the miracle of PUNCHED TAPE

Friden

RE-GENERATING MACHINES

PROGRAMATIC BILLERS

See the Friden
See the Friden
Bulmers
range on No. 14
rastand Business
at the Business
Ethiciency
Exhibition

What began as a specialised device for sending typewritten messages automatically has suddenly become a solid basis for office automation. The tape itself has been transformed into an automatically prepared, highly efficient proxy for cumbersome source documents. Continuous records of any length are handled by means of tape, and unit records have been developed by using the edges of cards to carry the punched data. The miracle has been thoroughly harnessed.

> High Speed-Tape Operated-Data Processing

Please write for full details



BULMERS (CALCULATORS) LTD. 47-51 WORSHIP STREET LONDON. E.C.2. MONARCH 7991

Branches and Service depots throughout Gt. Britain

T is the habits of people that enable you to judge what they I they are going to do, and how they are going to do it. Knowledge of the factors that can change habits enables you to take advantage of every change and to bring into your planning that pliability and freshness of which Wellington was master.

People are today exposed to many powerful influences which radically affect their habits. There may have been a time when the only thing a manufacturer had to consider was the habits of the consumer. But today the problem of expanding sales has become much more complex. We need to examine not only the Habits of the Consumer, but also the Habits of the Retailer

Habits of the Competition

Habits of the Product itself Habits of Suppliers

Habits of Other Manufacturers Habits of Organized Labour Habits of Governments

Here are some of the detailed points to consider:

1. Habits of the Consumer

Modern methods of market research enable us to delve deeply into the buying habits of people-What do they need? Is that need being catered for? Can it be intensified? Where is it bought? What price do they pay? How often do they buy it? What is the social class? What is the age group? What kind of advertising media are they exposed to?

will help to determine your advertising effect, size price structure, the channels to which you should direct consumer demand? your sales force, and the number of times they should call on their customers; also the size of your market and how far it can be expanded.

2. Habits of the Retailer

Do they stock the product? Can they be persuaded to stock it? Can they buy direct from the manu-

What kind of trade associations have they? How strong? How big?

SEPTEMBER, 1958

To Expand Sales You Must Study Habits

Says W. I. Sibbald, General Sales Manager, S. C. Johnson & Son Ltd.

Are you a creature of habit, or do you succeed by studying other creatures' habits?

An examination of these factors Do they impose restrictions on con- The size of their packages. ditions of trading?

What stock do they carry to cover

3. Habits of the Competition

Habits of both consumer and retailer are often influenced by the activities of the major competitors and the length of time they have been operating. You need to assess just how far this is so in your own field, and whether the habits already created are the best. In particular, you need to know:

What are their terms of business?

The salient features of their products. How they distribute.

Do they run on wound marketing lines?

Are the leaders in the field relying on the weight of momentum to carry them through, and therefore vulnerable to an aggressive operation?

What effect has local loyalties on their trading position?

What do they spend on advertising? The disposition of their sales force, and how it is directed.

Continued on page 122

MORE-ISH

The more successful you are the more invoices you will need.

The more invoices you need the more use you can make of Rotaprint.

The more use you make of Rotaprint the more successful you will be.

That's why more enterprising people are buying more Rotaprint machines.



This is the R.70 small offset printing machine. It costs £445. It is compact, simple to operate and fast. It will cover every duplicating requirement and will also produce all kinds of printed work, from simple office forms, to illustrated sales literature. It will pay for itself in a very short time.

Rotaprint

	ENQU	IRY	FORM
Please n together	with up-to-	letails of date spec	f Rotaprint machin cimens of their wor
NAME			
DEPART	MENT		***************************************
No. of control of			ar and a second control of the second contro
Pin this E	nquiry Form	to your k	etterheading and post

ROTAPRINT LIMITED . HONEYPOT LANE . LONDON N.W.9 Colindale 8822 (12 lines)

R9

A firm of boiler-makers achieved higher output and lower costs when they got employees round a table to ask them how they could improve products and production methods

Employees' Ideas Slashed Prices

by Philip Marchand

launched out into a new line of pro- make oil-fired boilers was taken, clude one or two workers, the shop duction. Established in the 1840s, management gave a party in the steward, foreman, production manthe company specializes in making works for all employees. With the ager, estimator, works manager and oil-fired and electrical cooking equipbeer and sherry, the company also the managing director. ment for the marine trade and all threw in a full explanation of what At first, the committees seemed types of sterilizers for hospitals. they were going to do, why, and how more concerned to use the monthly However, when Wilsons wanted to they would do it. expand the business to cover other for new products to manufacture.

to develop oil-fired domestic and and what the objectives are. commercial boilers, and they began burner manufacture.

incided with a new look in manage- duction of one of the company's lines. and reports heard at succeeding meet-

HREE years ago the family ment policy that is now paying off A complete cross section of the firm concern of Henry Wilson and in terms of lower prices and more gathers round a table to learn and Co. Ltd., Kirby, Liverpool, production. When the decision to suggest; a typical group might in-

markets they began to look around parties since, but the first one set the were to be working committees, and tone of the new policy: everybody at not do-good jamborees, the grouses Wilsons' long experience with oil Wilsons is kept in the picture, and petered out. burners made it a 'natural' for them knows how decisions are arrived at

production of these in the autumn of trading groups that have been set up, discussed fully, and if considered 1955. Now a very large part of their one for each type of product. A worthwhile they are followed up by production is devoted to boiler and trading group is, in effect, a commit-either the suggester or the managing tee that meets once a month to dis-director. Launching these new products co- cuss all aspects of selling and pro-

meeting to air grouses. However, Of course, there have been other when it was realized that the groups

The groups work in this way. Ideas for improving both products This is achieved through three and organization are put forward,

Minutes of these meetings are kept,

ings. In this way the groups learn what has been done about their suggestions.

The groups also go fully into costs, prices and sales trends. Managing director David Wilson makes a point of producing complete sets of sales figures and costing estimates. Every group member then knows how expensive boiler parts etc., are, what castings cost, and the costs of such processes as riveting in terms of materials and man-hours.

The trading groups have certainly produced cost-cutting results. One example is that of the employee who, on his own initiative, took the trouble to estimate the cost of spot welding hot-cupboards of a new design that Wilsons recently introduced. He considered such details as the movements involved and the time required, and discovered that it would be cheaper and just as satisfactory to do this job by riveting instead of welding. He produced his idea at one of the monthly meetings and it was immediately adopted.

Each idea may produce only a small saving, but it is due to a succession of these that the company have been able to reduce costs considerably.

Earlier this year, when Wilsons found that the market for domestic boilers was expanding, they wanted to cut their prices to be more competitive. This was done in three ways:

1—They looked into their production capacity and decided to invest £1,000 in extra welding sets. This was essential to step up production.

2—They examined material costs, then brought in their suppliers to explain they wanted to peg down costs. By placing big, long-term orders they obtained good discounts. 3-They explained to shop stewards and other workers what they aimed to do, impressed on them that if they could reduce labour costs, prices would come down and more boilers would be sold. The domestic boiler will eventually make them better off; cent. group were given the break-down they are willing to take a cut in takefigures relating to overhead, labour and material costs.

Labour costs were cut when overtime and Sunday working could be with their own. So much so that by more than 30 per cent.



When Henry Wilson and Co. decided to break into the domestic boiler market they explained their new policy at a party for employees and wives. Since then the management have gained a great deal from active shop-floor co-operation

when Wilsons were able to streamline their production methods.

The company, who have built up their boiler production in three years from scratch to many hundreds a week, are now culling the benefits of And when salesmen report back to large-scale production techniques. By re-thinking production phases ly interrogated on their success by and introducing flow-line work they employees and foremen as by the have achieved higher productivity.

Significantly, a good deal of the ization came from the shop floor, and were expressed both in and out explained that working time must be reduced, a spate of ideas came in. For example, welders found that if they had less handling to do they could chalk up a much higher welding output, and suggested an alternative method for receiving work.

Of course, less overtime and a employees sometimes worked a sevenday week, has meant a slight drop in earnings. Men who averaged £24 a week before tax now earn £1 or £2 less, but after tax deductions the difference is not so great, and there

finally eliminated. This was possible when a group were recently discussing how Wilsons could produce an improved boiler, one suggestion made was that some casting work should be done outside the firm, as a subcontractor could do it more cheaply. Kirby, they find they are just as keenmanaging director.

Wilson's say that the trading groups initiative and ideas for this reorgan- have helped to break down any officeversus-works mentality, and a number of promotions from the shop floor of the trading group. Once it was to positions of foreman, salesman and works manager has helped this further.

They admit that the success of the trading groups has sometimes been due to the more commercially-minded coming forward with ideas. worthwhile suggestions have also come from individuals who may say five-day week, when previously some little at a number of successive meetings, and then suddenly produce useful ideas.

A glance at the company's revised price list for smaller boilers brings home the effectiveness of the trading groups and management's outlook. have been no grumbles. Employees Most boiler prices have been reduced. are convinced that the new set-up in some cases by as much as 16 per

Lower prices have certainly brought home pay now because they are con- in orders, and the company have fident this will be reversed tomorrow. begun night shift work to keep up They identify the firm's progress with demand, which has already risen END

CALCULATING? ADDING?

DU Olectric &





the first

name in

figurework

Manufactured by Bell Punch Co.Ltd., Uxbridge, Middlesex and Portsmouth, Hants

Sales Home Market: SUMLOCK LIMITED, 1 Albemarie Street, London, W.I. Tel: HYDe Park 1331

Sales Export Market: BELL PUNCH EXPORT CO. LTD.,

39 St. James's Street, London, S.W.1. Cables: Belpunch, London

Bell Punch also manufacture: Adding Machines, Fare Collection Systems, Cash Contra Systems, Tickets and Receipts, Ticket Printing Machinery. Taximeters, Totalisator Equipment, and Aircraft Instruments

We Copied Nearly 600 Documents in a Fortnight

by W. Ellis

Head of the Document Section, British Standards Institution

An international conference required over a quarter of a million copies of resolutions, minutes, etc., many of them to be made in the lunch hour

of documents is nothing new to the British Standards Institution. But documentation for an international conference with 850 of two Rank-XeroX Variable Ratio delegates from 40 countries is never- cameras, one fuser and two procestheless a serious commitment.

When planning the Document Section for the recent International Organization for Standardization's Conference at Harrogate, it was essential to devise a system which was reliable and speedy, able to handle sudden rushes of work but at the same time economical.

For some time I had been considering the possibility of using xerography and offset-litho duplicating for my normal work, and so decided that this conference offered an excellent 'battle trial.'

We had to have equipment which could cope with any type of document, because it was not known what documents delegates would bring along.

My estimate of the documentation likely to be needed was based on experience of previous international conferences, but we had not before had such a large number of technical committees meeting at the same time; 15 committees met over the two weeks, eight of them simultan- all the size-to-size copying, and as it eously on most days.

The document section unit consisted of seven copy typists, two readers, a collating team, a drawing of-

in the two languages used—English and French.

The xerographic unit was made up sors, and their operators. Gestetner installed four operators with three of their new Gestelith offset-litho duplicators.

The work came in rushes, but it nevertheless had to be cleared quickly. After each morning session 'brief minutes' were prepared and some of the committees required these to be ready for the delegates when they reassembled after lunch. A work chit was designed to give all the necessary information as briefly as possible. This included the number of copies and when they were required, any special instructions, and provision for noting the progress of the document through the section.

Standard margins for typing were laid down, so that each page could be put in the same place on the copyboard of the Xero X camera. In this way it was ensured that the image was on the same part of each master. thus cutting make-ready time on the offset-litho machines.

One of the Xero X cameras handled turned out, it could have coped with all the work.

Two operators on the Xero X equipment were able to produce masters at fice, the machine operators and three the rate of one every 70 seconds when

ANDLING large numbers translators to provide the documents necessary; at the busiest times, with one supervisor and three operators, they were able to produce one master every 25 seconds. This, coupled with the speed of the Gestelith machine (one had a maximum output of 9,000 per hour) enabled time schedules to be maintained.

> Several documents brought by delegates contained graphs and photographs. The quality of reproduction from these was excellent. The average run of copies was 160.

> A standard grade of paper of the A4 size was used for both the preparation of the original and of the copies. One of the advantages of the Xero X-litho method is that copies can be made on a not too absorbent paper, suitable for delegates to make notes and observations in the margins.

> By the end of each day the various committees (discussing subjects as diverse as nuclear energy, screw threads, photography and tin cans) had produced a considerable body of minutes, resolutions, etc., so that our busiest time was late evening and early morning.

> In addition, a daily news sheetthe I.S.O. Courier-was produced, in both English and French, and delivered to each delegate at his hotel every morning.

> By the end of the conference, the Document Section had handled 591 documents, 1,751 masters had been made and 285,754 copies run off on the Gesteliths.



* the business forms consultant

Top management everywhere is concerned with the problem of cutting time, labour and costs in paper work.

Some "make do" as best they can but the Executive knows that the most effective method of tackling the task is to call in the LAMSON PARAGON Consultant. Investigation of documentary procedure is a gratuitous part of the Lamson Paragon Business Forms service.

In the meantime we invite you to see a LAMSON PARAGON BUSINESS SYSTEM SURVEY with relevant specimen forms covering any of the key operations of business listed. Please indicate your particular interest by a tick in the appropriate box or boxes.

Lamson Paragon Ltd

PARAGON WORKS, LONDON, E.16

Telephone: ALBert Dock 3232

	_
BUYING	
STORES CONTROL	
MANUFACTURING	
SELLING	
DELIVERY	
INVOICING	
CREDIT	
SETTLEMENT	

Attach the enquiry form to your letterhead or business card.

Specialist Divisions in :— CONTINUOUS FORM-FEED for

Punched Card Accounting Machines Computer Output Units Addressing Machines Teleprinters

ypewriters and Keyhoard
Accounting Machines

AUTOGRAPHIC REGISTERS and Handwritten Continuous Forms

CARBON COPY and LOOSE LEAF BOOKS and SYSTEMS

BUSINESS BOOKSHELF

by H. W. Ehrmann (Oxford University Press) 60s. net, 62s. post paid. An American professor who had 130 lengthy interviews with high Government and business officials in France has written a fairly lengthy book analysing the activities of French employers' and trade associations from 1936 to the present. On the whole, he is critical of the high degree of 'corporatism' which he found, industries standing together to demand protection from the Government rather than helping themselves. But then, of course, the majority of the people he interviewed "are officials either in the central employers' association or in the most important trade associations or they are active in specialized and 'vanguard' groups of the employers' movement." It is hardly surprising that he obtained from these men a picture of intense corporatism. That is their living. By contrast, if more of the interviews had been with rank and file employers, perhaps it might have been possible to write a book on the apathy of French businessmen towards the activities of their own corporate bodies.

AMERICAN INVESTMENT IN BRIT-ISH MANUFACTURING INDUSTRY by John H. Dunning (Allen and Unwin) 35s. net, 36s. 6d. post paid. At present more than 300 subsidiaries of American corporations and jointly financed Anglo-American concerns give employment to

ORGANIZED BUSINESS IN FRANCE by H. W. Ehrmann (Oxford University Press) 60s. net, 62s. post paid. An American professor who had 130 lengthy interviews with high Government and business officials in France has written a fairly lengthy book analysing the activities of French employers' and trade associations from 1936 to the present. On the whole, he is critical of the high degree of 'corporatism' which he found, industries standing together to demand their exports accounted for one-tenth of all British manufacturing exports. These basic figures give the size of Dr. Duning's survey. He has devoted a chapter to each aspect of the American invasion which, though it has a long way to go before native British firms are outnumbered, plays a special part in improving the managerial techniques of firms in Britain.

For example, it was found that 70 per cent of the American-parented firms in the survey were strongly influenced by the modern methods of financial control and pre-production planning of their parent companies. Another 20 per cent were partly influenced. Moreover, they have shown that these methods can be applied in the smaller firm, as well as in the large. Dr. Dunning and his colleagues visited 125 firms with 750 or less employees, and "over three-quarters of these stated that it was quite economical to practise most of their American associates' production control techniques. In their opinion the main determinant was neither a question of high capital costs, nor of an expensive use of manpower, but rather that of careful and systematic thought, and a willingness to adopt new methods."

MANAGEMENT IN A RAPIDLY CHANGING ECONOMY edited by D. H. Fenn (McGraw-Hill) 39s. net,

41s. post paid. An edited version of the papers presented at the Harvard Business School's 27th National Business Conference. This is a fruitful source of up-to-date ideas on trends in the growth of the economy as a whole, in the development of new markets, practices and methods.

ANNUAL REPORTS OF COMPANIES by R. Keith Yorston and E. Stanley Owens (Law Book Co. of Australia via Butterworth, London) 72s. net, 75s. post paid. Gives guidance on the preparation of annual reports, with many fine illustrations of the reports of the most progressive companies in Australia.

THE DIRECTORY OF OPPORTUNITIES FOR SCHOOL LEAVERS 1958 (Cornmarket Press) 8s. 6d. net, 9s. 3d. post paid. A very useful guide to the careers opportunities offered by a wide range of British firms, with a series of introductory articles by experts in various fields.

BOTTIN INTERNATIONAL 1958 EDITION (Bottin International Co., 62 Oxford Street, London W.1) 95s. net, 98s. 6d. post paid. The first 1,200 pages of this register are classified under the World by Trades. An impoter or exporter who wants to know the names of all the main firms concerned with a particular product will find them listed by country and city. The last 1,000 pages of the register are concerned with the Countries of the World. Anyone interested in a particular town may look it up and find listed his likely contacts, such as embassies and consulates, chambers of commerce, and firms engaged in activities concerned with international trade, such as customs agents, shipping lines, travel agents, insurance companies, banks and hotels.

MATHEMATICS IN BUSINESS by Lloyd L. Lowenstein (John Wiley) 40s. net, 42s. post paid. A very detailed but elementary textbook, beginning with simple arithmetic and working through to depreciation, annuities and logarithms.

ECONOMIC SURVEY OF EUROPE IN 1967 (Economic Commission for Europe). The official E.C.E., annual report, a mine of facts about economic trends in European countries.

ADVERTISERS' AID (Newspaper Society) 21s. post paid. Guide to the advertising rates and other details of provincial and London suburban newspapers.

POINT OF SALE SYMPOSIUM (Available from Leon Goodman Displays Ltd.) Contains a few score of messages from leading personalities concerned with point of sale display, whether as officials of the advertising profession, as users or advisers on the art of display.

BUSINESS Readers' Book Service Orders are dealt with and posted to you within 48 hours. If you are not near a bookshop, BUSINESS will obtain for you any of the books reviewed here. Just send a remittance for the full, post paid price, together with the completed coupon below: ORDER FORM Business Readers' Book Service 109-119 Waterloo Road, London, S.E.1 I enclose remittance £ for the following books:



ALL PURPOSE, DIRECT-ENTRY ACCOUNTING MACHINES

Adaptable within seconds to any phase of any accounting plan, no matter how diverse. "The fastest and most versatile direct entry accounting machine in the world."

Beautiful machines, beautifully made by



Adding & Accounting Machine Division of The National Cash Register Company Ltd., 206-216 Marylebone Road, Landon, N.W.I. Tel: PADdington 707@

How to Make a Quick **Market Survey**

by W. R. Mills

Here is a check-list of the information you should seek

and fairly accurate estimate.

The data collected before deparareas not served with electricity. ture should prove valuable in carrysure of its accuracy.

You need reliable answers to the following questions: (a) How much does the total market absorb per annum? (b) In what consumer or user price brackets are the highest imports? (c) What share of the market can your company acquire?

The answer to the first question is usually forthcoming from the customs authorities, but your embassy or consulate should provide you with copies of the local official statistics.

Having found out total current imports, then consider how the goods are being distributed.

Firstly, you need to seek particulars of the population of the country -the total, its distribution by cities and towns, rural areas, races and ages. Now apply these figures to the projects. usage or consumption of the product.

O survey any market thor- allowing for the customs of the vari- so far from official statistics, publicaoughly could take months or our races in the population, as they tions and reliable opinions, spend years. The average export may concern the use of the product. some while on market details. Study representative has only a few weeks For example, if you are wanting to the movements of the various brands at the most. Therefore he must import electric light bulbs, you must of your commodity. Find out the devise a means of making a quick discount from your calculations that rate of movement, preferences, poppart of the population which lives in ular retail prices and trade profit

Next consider the geography of retail establishments. ing out this task, provided you are the country, the locations of cities and towns, the dispositions of roads, railways, inland waterways, areas where good communications facilitate distribution, and areas badly served by distributive organizations. Examine the effects of this on the purchasing trends of the population living in these areas.

Then consider the wealth of the country, the prosperous and lean seasons, and the division of the population into income groups.

Examine industrial development. Consider what effects certain projects will have on the wealth of the population, and to what extent various projects will create movements of population, new towns, new and improved communications, and may-

Having built up your appreciation share.

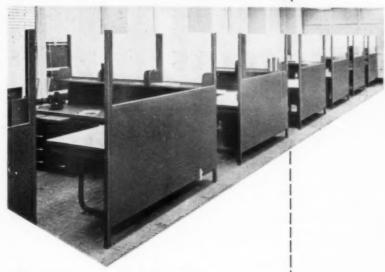
margins from various wholesale and

Lastly, make intelligent comparisons between the situation you are appreciating and the known situation in some other similar country.

If practicable, purchase samples from the market of your own and competitive products, including those locally manufactured, and list intelligent comparisons.

By the time your investigations have reached this point, you will know whether or not: (a) The market is saturated; (b) the market is undersupplied; (c) the market is adequately supplied; or (d) the market is likely to expand or contract in the future. Furthermore, you will have an idea of the share of the market you can hope to obtain; of what type, quality and packing; at what conbe new industries ancilliary to the sumer or user price; and how your agent should set about getting your END

More working space





Whether you work in crowded London or some more tranquil spot, Art Metal EL-UNITS will give you additional "elbow room".

A variety of standard tops and pedestals provide more comfortable and efficient work units than conventional desks—often at less cost. Arrange them how you wish—extend them when you wish. And glazed panels can be added if you want greater privacy. Get to know all about this latest development by returning the coupon below.

Art Metal



COUPON

To: ART METAL CONSTRUCTION COMPANY, 201 Buckingham Palace Road, London, S.W.1. Please send Catalogue No. 604

Name

Firm

Address

It costs £9 a week to have their canteen run by experts—but extra efficiency makes it pay

How Consultants Manage This Canteen

by George Hamilton

BOUT 240 people are employed at the London head office of Schweppes Ltd. Some 140 of them eat in the canteen every day. Until five years ago, the company had the usual problem of providing an adequate meal for this small number of people without letting the cost get out of hand and without getting too involved in supervision.

The running of the canteen was in the hands of a canteen committee. The management paid for all overheads and services, major equipment and staff wages. But the canteen was supposed to recover the cost of food supplies and replacements of crockery and cutlery, while also building up a small cash reserve for the Christmas dinner, at which food and drinks are free.

While the head office was still quite a small unit, its canteen functioned satisfactorily in the hands of a manageress. But as activities expanded, staff increased and new difficulties arose. Control over the canteen's transactions became more complex; if the manageress were ill or absent there was a crisis; canteen assistants were hard to get and harder to keep; costs seemed to be rising unduly and in some years the cash reserve melted away altogether.

canteen management consultants, return, and all expense vouchers are Practical Catering Systems Ltd. of

P.C.S. run the canteens of about 120 firms and organizations all over Britain. Here is how they work:

1-They assess each canteen to which they are called, and present a report on it. Management lay down the conditions on which they wish the canteen to be run, the prices to be charged, etc.

2-P.C.S. install one of their manageresses or train the existing manageress to work with their own methods. Other staff are kept on. All staff wages are paid direct by the client company.

3-Over the manageress is an area manager. He works closely with her -and, of course, with a number of other canteen manageresses in his area-planning menus, checking that P.C.S. methods are fully used and discussing any problems both with her and with the management. The area manager visits each canteen at least once a week.

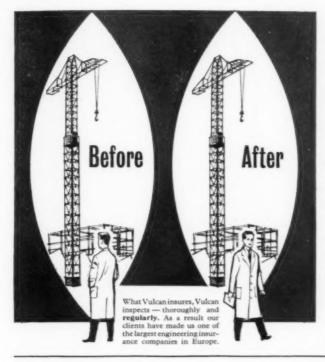
4-A team of specialist accountants is maintained. They control the stock and check the accounts of each returns has to be carried out by the under the old system.

So the company called in a firm of manageress, including a weekly stock sent to head office. At least once a month an accountant checks stock physically. Once a month, too, a detailed profit and loss account for the canteen is sent to client com-

> 5-A reserve pool of supervisors is kept by the consultants. If a manageress is absent at one of their canteens, a supervisor can take over at a moment's notice.

> This arrangement has worked very well at Schweppes. The quality of food served has improved, canteen staff worries are no longer the concern of the management, strict accounting supervised by experts ensures that a good level of efficiency is kept up, and the cash reserve usually exceeds its target by a healthy margin.

Cash benefits of having the canteen run by consultants have been considerable at Schweppes. P.C.S. charge a weekly management fee and take a percentage of all gross food takings. If, in a typical four-week period, takings were £300, the consultants' fee and percentage earnings would be about £35 in all. This would still leave a cash surplus canteen. A strict programme of greater than the average achieved



And the difference?

Maybe £5,000

He spotted a fault in the safe load indicator and an accident has been prevented.

The Vulcan Engineer-Surveyor during his regular inspection of the crane. His experience gives him almost second sight into accidents that are waiting to happen.

Are his services expensive?

Not at all. Your broker will tell you that, though the Vulcan man is a specialist, his services cost no more than insurance and inspection by general practitioners.

FREE--

"Vulcan"—a journal of absorbing interest to all users of plant and machinery with reports of accidents and safety hints. For a year's subscription—free—write now to Dept. No. 4.



67 KING STREET, MANCHESTER, 2.

VULCAN INSPECTS-AND PROTECTS_

CONTRACT **FURNISHING**

where we come in . . .

When you're thinking of making your offices more up-to-date and impressive than ever before-that's where we come in. We have the experience and the facilities to give a complete service for all types of contract furnishing. Let us handle the design, manufacture and supply of your whole project. We specialise in high grade furniture, in reproduction or contemporary styling, for executive offices, boardrooms, hotels, restaurants and libraries. Let us arrange a preliminary discussion without obligationa specialist representative would be pleased to call on you. ESTABLISHED FOR HALF A CENTURY—MAKERS OF THE FAMOUS ELASTIC 'BOOKCASES

OBE WERNICKE

GLOBE-WERNICKE LTD

(CONTRACTS DEPARTMENT) . 82 VICTORIA STREET . LONDON . SW1 Telephone Nos. VICtoria 0372 · 0085

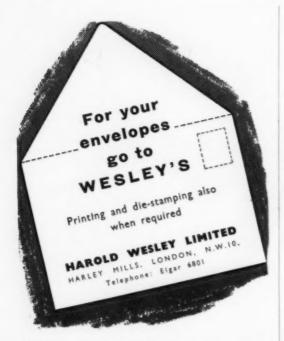




For absolute permanence, use Verithin Coloured Lead Pencils when checking, or preparing graphs. maps and records of all kinds. The insoluble coloured lead won't run if wetted by rain or spilled water; won't smear under moist hands; won't smudge when rubbed by other papers. What is more, the tough, resilient lead can be sharpened to a needle-fine point that will hold under extra hard pressure. A: Verithin Coloured Lead Pencil gives over 4,000 check marks with one sharpening-real economy, real reliability. 8d. each. 25 vivid colours.

rithin

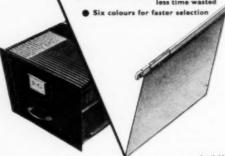
EAGLE PENCIL COMPANY, ASHLEY ROAD, TOTTENHAM, N.17



| Bales offices at Birmingham, Manchester, Bristol, Burton-on-Trent, etc.

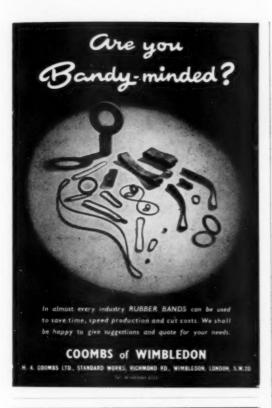
EXPANDEX VISIBLE FILING

- Will fit any filing cabinet old or new
 - Telescopic ends mean easy running and foolproof signalling
- Snap action protectors mean even less time wasted Six colours for faster selection



Available from your local distributor, or in case of difficulty write to:

EXPANDEX VISIBLE FILING CO. LTD. SURPASS HOUSE, 26 HARRISON ST., LONDON W.C.1





STEEL STORAGE SHELVING

Our technical staff will solve your problems Planned layouts without obligation

Shelving built for the job . . .

Saves valuable storage space

Ask for Leaflet No. 21455 also for clothing locker leaflet No. 2350.

JOSEPH WESTWOOD & CO., LTD.

Contractors to H.M. Government Departments. Crown Agents for the Colonies. British Railways (British Transport Commission) etc., etc.

NAPIER YARD, WESTFERRY ROAD, MILLWALL, E.14. but-points don't break
when you use

TRAGILE "CHEMI * SEACED"

EAGLE CHEMI-SEALED"

MIRADO pencils

Here's a pencil you can always rely on—Mirado. The points won't crumble or break under normal usage. For two reasons. The lead itself is of a fine, smooth and long-lasting quality, and the Eagle Patent Super-bonding process welds the lead and the wood casing into one inseparable unit, giving maximum resistance to breaks. Change to Mirado and watch your pencil costs decrease.

THE PRESSURE SCALE

breaks points so that you won't." The pencil preases down at normal writing angle. The dial shows that the weight needed to break the point is far above normal writing pressure.



EAGLE PENCIL COMPANY, ASHLEY ROAD, TOTTENHAM, N.17



No more illegible copies-carbon paper is renewed automatically by the patent Fanfold impulse feed mechanism, which moves carbon paper 1/12" from right to left each time a form is ejected.

Fanfold portable registers are filling a need of growing importance in commerce and industry today. In the factory, at point of sale, in the office or on the road, wherever handwritten records are made, they give positive control of business at all vital points, offering protection against lost or illegible forms, carelessness, or un-recorded transactions.

Fanfold registers are supplied in four sizes, viz: for forms 4 16" x 6", $5\frac{1}{2}$ " x 8", 8 $\frac{7}{16}$ " x 8" and 8 $\frac{7}{16}$ " x 10". Each has a capacity for 150 2-part, 100 3-part, 75 4-part or 50 5-part sets.

Fill in and post the coupon below, and we will send you our Business Practice Report No. 7, which gives full details.

FANFOLD for forms

FANFOLD LIMITED, BRIDPORT ROAD, LONDON, N.18 Telephone: EDMonton 5404 (6 lines) Telegrams: Busiforms, Norphone, London

City Sales Office and Showroom: 74-75 Watling Street, E.C.4. Telephone: CITy 3781

GLASGOW BIRMINGHAM MANCHESTER LEICESTER LEEDS CARDIFF NEWCASTLE BELFAST and DUBLIN



To FANFOLD LTD, Bridport Rd, Edmonton, N.18. Please send me your Business Practice Report No. P.7, on the advantages secured by the use of Fanfold Portable Registers.

NAME.

STATUS...

COMPANY'S NAME

ADDRESS

OFFICE

Upholstered fibre glass **furniture**

New techniques have been applied to furniture manufacture to produce Lurashell chairs and settees. The



Lightweight and durable

furniture is of moulded construction: to this bare shell foam and rubberized hair cushioning is bonded. The result is attractive in appearance, very comfortable, and has many practical advantages.

A feature which will appeal to those responsible for furnishing reception or recreation rooms and other heavily-used areas is the slipon covers, tailored to fit like a glove. These are fastened by press studs and are made in a wide variety of fabrics -some washable-including a richlooking wide-ribbed corduroy in a choice of several deep, glowing colours. The covers use relatively little material and are therefore reasonable

The furniture is lightweight and extremely durable. It is impervious to kicks, and, of course, such hazards as damp and insects. The range includes chairs and settees in several shapes and sizes, and small stools. Heal and Son Ltd., 196 Tottenham Court Road, London W.1

Offset litho duplicator -many new features

Ease of operation, absolute precision of registration and general versatility are outstanding features of the Gestelith offset litho duplicator. A relatively small machine designed for office use, it is nevertheless capaable of doing elaborate colour work.

All controls are situated on one side or on top of the machine, making

to be foolproof. A valuable feature, particularly for occasions where work is rushed through, is the micrometer adjustment for paper feed. This means that if an image is placed crookedly on the plate adjustment of the feed angle alone will place it squarely on the paper.

Maximum print area is 93in. by 13½in. Copy paper may vary in weight from airmail to three-sheet card, and mixed stock can be used during the same run, if necessary.

Maintenance is made as simple as possible. A black ink evolved for use on the machine does not scum over for considerable periods. Changeover to colour work is done in a few



Variable output speeds

moments-the whole ink roller assembly being detached and replaced with a spare.

Output speeds can be varied between 3,200 and 7,200 sheets per hour. Up to 5,000 sheets can be loaded on to the fced tray. The machine is 61in. long, 28in. wide and 50in. high.

Gestetner Ltd., 210 Euston Road, London N.W.I

All-to-all communication with small intercom

Many small intercommunication systems provide no means for substations to speak to one another. In the All-Master system, as its name

access easy. Switches are designed indicates, any station can be connected to each of the others. From two to six stations can be connected in this way. And a two-set system can later be extended by adding extra stations.

> Each instrument operates from two standard torch batteries, which should last about six months in normal use, it is said. Connections are made with lightweight colour-coded cable, five-core for up to four stations, seven-core for larger installations. These are easily connected by the user to a terminal block attached to each instrument.

A call to another extension is made by turning a pointer to the appropriate number on a small dial in front of the machine, and pressing the 'speak' switch. Releasing this puts the equipment on to the 'listen'

Size of each station is 81in. by 64in. by 64in. high. The casing is

Broughtons Commercial Services Ltd., 10 Victoria Rise, London S.W.4

Autographic register's fool-proof feed

The trouble-free operation of the Cat-Write portable autographic register is due to its purely manual feed, the makers say. Absence of any mechanism has also made the register lightweight.

Invoices, receipts, dispatch notes



Trouble-free operation

^{*}Equipment included in this survey is selected for its news value alone. Manufacturers are invited to submit details of new and interesting products for consideration. An original photograph should accompany each item submitted.

register. It takes a stack of about prepared for painting. 100 three-part sets; maximum number of parts is six.

Carbons are attached to punched strips of card which fit over retaining pins. When loading the register, stationery is interleaved with the carbons and pulled under a tear-off blade at the delivery end until two spring-loaded pins engage holes punched in the paper. It is then ready for action.

To release the completed form, the retaining pins are disengaged by pressing a lever. The stationery is then pulled forward until the next set of holes is engaged, automatically positioning the next set of forms correctly.

The Cat-Write is made with a 5½ in. or 81 in.-wide plate. Length is 81 in. in both cases. Forms shorter than this may be used, however, because the feed is determined solely by the position of the perforations.

A. J. Catlin Ltd., Jasper Road, Westow Hill, London S.E.19

Partitioning can be made-to-measure

Made-to-measure wood partitioning is a new venture of a well-known firm of furniture makers. The partitioning is designed for quick erection, easy demounting, and adapta-

Panels may be made of solid wood, such as mahogany or walnut, or of



Tailor-made enclosures

hardboard, asbestos or other materials. In the latter case, wood veneers

and similar documents can be made used on either side, if required. Al- with the same capacity of that of a out conveniently and simply on the ternatively, the partitioning may be standard filing cabinet.

> as in the illustration, or entirely solid. Because they are tailor-made for each individual case, any size space can be enclosed. Good finish is a notable feature of the work. Nevertheless, prices are said to compare favourably with those of readymade partitioning.

> J. L. Green and Vardy Ltd., 79 Essex Road, Islington, London N.1

Filing desk houses wheeled trolleys

The desk shown here consists of a metal framework which houses two completely independent mobile trolleys. These have self-aligning runners for easy closing, and are fitted with large castors so that the heaviest material can be moved with ease.

Interior fittings, varied in depth



'Garaged' trolleys

and partitioning to suit individual requirements, can include suspended filing framework. Card index, document files, ledgers, or all three can therefore be stored. Capacity of each trolley is said to be equal to that of two filing drawers, and there are no limitations as to weight of contents.

The Mobile Office Furniture Co. Ltd., 113 Uxbridge Road, London W.5

Cardboard units cut storage costs

A convenient and low-cost method of storing documents not in current use is offered by National cardboard units. What looks like a cabinet in the illustration is, in fact, four separate units piled one on top of the can be added, a different finish being other. Each has a pull-out drawer

Units are supplied in cartons of The partitions may be half-glazed, 10, folded flat. Full assembly in-



Four-part 'cabinet'

structions are enclosed and the job can be done in a few minutes. National Loose Leaf Co. Ltd., National House, Cursitor Street, Chancery Lane, London E.C.4

Typewriter ribbon for plastics

All P.V.C. materials can successfully be typed on by a new typewriter ribbon designed for this purpose. Its chief application is expected to be in the making of plastic labels.

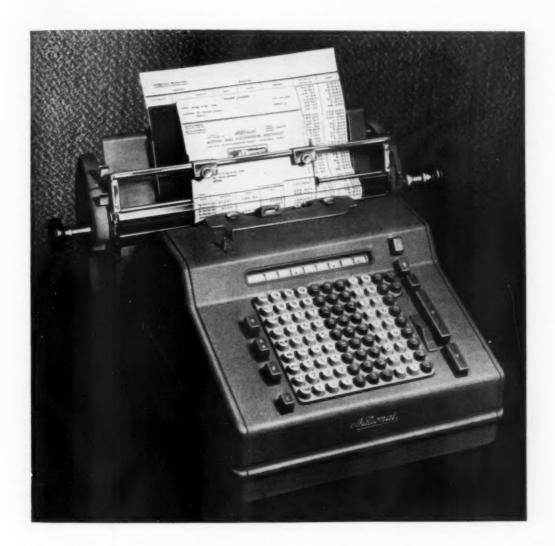
The ribbon is made in two lengths, for portable and standard typewriters respectively. At present it is available in black only.

Ellams Duplicator Co. Ltd., 5 Dean Street, London W.1

Typewriter mat will not skid

Fast typists who are used to chasing their machines all over the desk can eliminate this nuisance with the Typerite board. Equipped with thick rubber feet, it does not skid even during the most energetic work and on a highly polished surface.

The board is angled slightly, so that a machine placed on it is tilted slightly toward the user. This gives improved visibility and helps the



SMALL-OFFICE book-keeping machines

Low-cost multi-purpose models designed to meet the accounting requirements of smaller businesses and "sub" departments.



The National Cash Register Company Ltd., 206-216 Marylebone Road, London. N.W.I. Telephone: PADdington 7070

right posture—a factor which might tive and original is assured by the reduce muscular fatigue. Made of oak, the stand is finished with a sound - absorbent plastic felt base which can be wiped clean with a duster or damp cloth. Fixed to one side is a magnet for a metal-centred eraser.

Unida Products Ltd., 51 The Mall, London W.5

Table-top printer for small offset plates

Small offset litho plates are prepared with a minimum of difficulty on the latest model of the Mervac printer. Small in size, it retains all the advantages of larger machines of its class, the manufacturers state.

The printer is suitable for use with a maximum print area of 15in. by

worker to maintain the correct, up- 10in. Good contact between nega- an office table. Its steel cabinet is



Only 26in. long

vacuum blanket and internal pump unit powered by a fractional h.p. motor. Light equivalent to that produced by a 75 amp arc light is produced by six fluorescent tubes. Exposure time, shortened by this strong light, is automatically controlled by a time switch.

The equipment is easy to operate standard or pre-sensitized plate with and since it occupies an area of only Sahell and Co. (B'ham) Ltd., 101 New 26in. by 19in. can easily be used on Canal Street, Birmingham 5

finished with cream sprayed enamel. Grant Production Co. Lsd., 4 Rathbone Place, London W.1

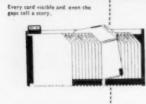
Attractive packing for heavy-gauge paperclips

Imagination applied to the packing of those prosaic office necessities, paperclips, has produced a transparent round container, attractive enough to stand on a desk. It is filled with 1,000 Executive clips, which consist of a single loop of heavy-gauge wire, like a narrow figure 8 cut halfway down.

This design prevents the clips from catching on one another when placed in files. The clips are unusually strong and are heavily plated to prevent corrosion even during long periods of storage.

Vistem

THE FASTEST VISIBLE RECORD KEEPING SYSTEM ON EARTH



Vistem Mobile Unit

Whatever your business might be, you fundamentally rely upon accurate records. To retain complete control your records must be accessible, flexible, and able to supply the complete answer upon demand.

It is not fully realised that equipment alone is not enough; you need a comprehensive system tailored to suit your own individual requirements. We can provide both.

Our 40 years experience of visible record systems in general and 20 years of the Vistem-type in particular is at your disposal. Write or 'phone and we will gladly have an advisor call upon you-without obligation of course.

Vistem Visible record equipment is most widely used for:

- Stock Control
 Purchasing
- Personnel
- Plant Records
- Sales Records Ledgers Hand or Credit Sanction
 Personnel Machine posted) Production Records



In addition to our enormous range of over 40 Vistem units we also have available Bizada one-line strip index and the Admindex flat-tray type of visible card index.



Carter-Parratt Limited

Systems Division, Iddesleigh House, Caxton Street, London S.W.1 Works: Sutton & Bath Telephone: ABBey 3675

More work need not mean more staff!



The PRIMUS man can show you why

That's all very well, but these office systems
cost the earth to install.
This one doesn't. You can use it on all your

This one doesn't. You can use it on all your existing typewriters, teleprinters and accounting and billing machines. There is no capital expenditure.

Won't my office be disrupted whilst my staff are learning to operate it?

Definitely not. Any typist can learn the Primus system in fifteen minutes.

My own system has been evolved to suit my special needs. I don't want it mutilated.

It won't be. The basic principle of Primus Continuous Stationery never varies, but at the same time it can be adapted to suit each individual user's needs perfectly. That's the beauty of it.

What saving will it show me?

On things like invoicing, works orders, goods received notes and purchase orders it will save one hour in three of each typist's time, boost her output by 50 per cent and eliminate a large percentage of errors. But look here, we've run out of space...

* The PRIMUS man can tell you all you want to know and prove his case in your office. You contact him. There's no obligation.

IT'S AS SIMPLE AS THIS



A PRODUCT OF

CARTER-DAVIS LTD.

20 QUEEN ELIZABETH STREET, LONDON, S.E.1 Telephone: HOP 5344 (5 lines)

BRANCHES IN BELFAST · BERMINGHAM · BRISTOL · DUBLIN · EDINBURGH · GLASGOW · LEEDS · LEICESTER · LIVERPOOL · MANCHESTER · NEWCASTLE



KNOWLEDGE

is **POWER**

In the modern industrial world "Power" has meanings which were undreamed of in Francis Bacon's day. Yet his famous dictum holds good for them all—mechanical power, production power, and the power of management to integrate and control the work of many machines. Accurate knowledge of machine and vehicle running times is indispensable—it is provided by the economical SERVIS RECORDER.



SERVIS RECORDERS LIMITED
DEPT B, 19 LONDON ROAD, GLOUCESTER
TELEPHONE GLOUCESTER 24125



Managers and buyers in works and offices all over the country specify Flo-master for all forms of marking because it is the most reliable medium available today.

-and for STENCILLING

The King Size for heavy industrial purposes is either used with the normal felt tip or with an interchangeable head to provide a constant feed stencil brush.

There are a hundred and one uses for Flo-master.

Fade-resistant inks available in 10 colours.

Interchangeable felt tips provided for different widths of line.



OCKET

SIZE

Flo-master

Send for illustrated leaflet

CUSHMAN & DENISON CO., LTD.

DEPT. G. 215/217 Coldharbour Lane, LONDON, S.W.9

Telephone: BRIxton 0747-8-9

WORKSHOP

Upholstery welded to steel

Mass production of upholstery welded to steel is now a fact, thanks to new materials and radio-frequency welding.

Plastic-coated steels like Stelvetite and Skinplate have been available for some time. And while plastics cannot be directly welded to steel,



For mass-produced uphoistery

they can be welded to the plastic coatings of these new materials. Thus entirely new production methods are opened up.

Car-type seating and attractive new types of furniture can be produced by engineering methods, lifting upholstery from a craft to mass pro-

Radio Heaters Ltd., Eastheath Avenue, Wokingham, Berks.

Levels controlled simply, accurately

Simplicity of design and troublefree operation are the main features



Simple level control SEPTEMBER, 1958

of a new level control system which can be fitted to containers that are filled by pneumatic conveying sys-

the container, one above the other, and connected by a rod, which in turn is connected to switches. As the container fills, the contents press on the top diaphragm, move the rod. and operate the 'stop' switch to give a warning. As the level falls, the rod moves in the opposite direction and operates the 'start' switch-or again gives a warning.

Blaw Knox Ltd., 94 Brompton Road, London S.W.3

Manual alarm rings on several floors

Designed to provide an extra loud alarm on two or more floors simultaneously, a new, hand-operated system consists of bell units connected by light shafting through the floors.

The bell units are 12in, in diameter. Operation on any floor is by sprocket

Hand-operated bell units that can be connected through several floors



and chain. Units are stoved in red. Linkage is supplied in standard lengths of 6ft. and 3ft., with special connectors.

Rely-a-Bell Burglar and Fire Alarm, 54 Wilson Street, London E.C.2

New floor polishes last for months

Plastic resin emulsion polishes are available which give long-lasting, glossy, but non-slip surfaces. Two new polishes are easily applied and give deep shines. An important

point, however, is that the floor must first be cleaned with a concentrate, Cleaner 53, available from the makers

Tilegloss dries with a shine. A Two diaphragms are mounted in light rub with a dry cloth removes dirt, makes and restores the shine, even after several months.

> New Tileseal gives a tough, resilient finish, which is impermeable to dirt. It is suitable for surfaces that carry heavy traffic, and requires no polish-

Floor Treatments Ltd., Wycombe House, Amersham Hill, High Wycombe, Bucks.

Buildings insulated from the outside

There is no need to interfere with existing roofs, production, electric wiring, or piping, with a new system of insulation which is applied from the outside.

Timber battens are placed on top of the roof along the lines of the existing purlins. The battens act as spacers to prevent compression of the glass fibre insulation that is laid between them. Then a new outside skin of asbestos cement is fixed to complete the job, provision being made for neat finishing at ridges, eaves and around rooflights.

Advantages are the very high standard of insulation obtained; the low cost of materials; ease and speed of fixing: and subsequent freedom from maintenance.

Universal Asbestos Manufacturing Co., Watford, Herts.

Pneumatic screwdriver has stronger motor

With a capacity up to hin., the SR8/500 pneumatic screwdriver/nut-



Weighs only 4lb.

runner incorporates a more powerful motor than that of the model it replaces.

Weight is 4lb., free speed 500 r.p.m. The spring-loaded clutch can be adjusted to give the required tension to screw or nut.

Desoutter Bros. Ltd., The Hyde, Hendon, London N.W.9

Welding guns are safer, cooler

Special attention to the operator's safety has been given in the design of the D.10 automatically timed wel-



Special safety circuit

ding gun. A special circuit automatically cuts off the mains supply if the earthing connection is broken. This means that even if the equipment is not properly serviced it is still safe.

The A.R.O. DP 36 gun, previously available only as an air-cooled version, is now available with water cooling, which means longer welding times without damage to the gun. A.R.O. Machinery Co. Ltd., 190 Castlenau, London S.W.13

Automatic press is versatile

Liquids are extracted from a wide range of solids by a new automatic conveyor press, probably the first of its kind. It handles any fruit, seeds, nuts, grass, vegetables, peat, sewage.

Operation is continuous. Material is placed on a conveyor which also acts as a filter cloth. It then passes under the press which holds the pressure for a pre-set time.

The machine has considerable advantages over every other type of press: it can hold pressure for any length of time; it requires less power; tages of normal parallel motion with



Handles wide range of materials

the material can be very wet or dry; absence of crevices means that it can be hosed clean.

Modern Mechanisation Ltd., Elmswood House, Bounds Green Road, London N.11

New high speed electronic counter

The new D.I. electronic counter counts articles passing between the photocell and lightheads at rates of up to 3,000 per minute. The action of breaking the light beam causes the count to be registered.

The unit employs a cold cathode dekatron counting tube and cold cathode valves. Thus there is no heat dissipation—a big advantage where continuous running under industrial conditions is required.

The dekatron counting tube records the count in units. An electro-magnetic counter records counts of ten: the total number which it will accept before resetting to zero is 9,999,999. A reset device is fitted, so that a new count can be commenced at any given time.

The D.I. will handle such objects as bottle-tops, crown corks, cans, bottles and small pieceparts. It will also count objects so small in area that their actual dropping speed when passing the photocell head, is in excess of 400 per minute.

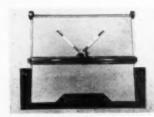
Electronic Machine Co. Ltd., Mayday Road, Thornton Heath, Surrey

Draughting machine gives great accuracy

Outstanding feature of the Angula straight edge draughting machine is that it can be fitted to any existing wire type of parallel motion. Designed around an extruded alloy straightedge, the unit retains all the advanthe additional facilities of a draughting machine.

The draughting head is mounted on a graduated alloy bar fitted to the straight-edge and acting as a track. Each end of the straight-edge is attached to the parallel motion wire by a finger-control knob which permits easy lining-up with the drawing.

Both straight-edge and carrying rail are the same alloy, thereby eliminating differential expansion and guaranteeing great accuracy. head is fitted with large ball-race



Smooth running head

bearings to ensure smooth running along the straight-edge.

The unit is available in two sizes: double-elephant and antiquarian. Angula Engineering Co. Ltd., Glaskin Mews, Penbury Road, Clapton, London E.5

New lifting truck straddles its load

Handling of long loads like pipes, timber, and iron poles, is often cumbersome and dangerous. But they can be lifted, carried, and dumped quickly and safely by the Valmet, a new truck which straddles its load.

The large wheels give satisfactory operation over the most uneven surfaces; the large tyres, with a broad area always in contact with the ground, give good traction. Manoeuvrability is assured by four-wheel



Lifts, clamps, and carries

steering. Loads are lifted, clamped, and lowered by hydraulic pumps driven by the engine.

Spares are no problem—engine is Perkins, gear-box is David Brown, and many other components are standard and widely available.

Materials Handling Equipment (Great Britain) Ltd., 40.4 Dover Street, Piccadilly, London W.1

Lifting table makes handling easier

Wherever very heavy loads have to be lifted from pallets, barrows, etc., to a convenient height for inspection, packaging, or loading, a new lifting table will be useful.

It is available in movable or fixed versions, with flat metal working top, or with rollers to assist man-handling heavy equipment. Maximum capacity is 1 ton.

A trailing lead plugs into the mains and a self-contained ½ h.p. electric motor drives the hydraulic pump



Lifts a ton

that lifts and lowers the table. Collapsed height is 9in. Maximum elevated height is 3ft. 6in. Lifting speed is 5ft. per minute.

Salisbury Precision Engineering Ltd., I Buckingham Palace Mansions, Buckingham Palace Road, London S.W.I

Compact truck for narrow gangways

Wherever space is restricted or floors are unable to take heavy weights, the *Model E412P* battery pallet truck comes into its own.

It is pedestrian-controlled. Maxi- Dept., Kingsbury, London N.W.9

mum capacity is 10 cwt. The hydraulic lifting pump is operated by hand or battery. Simplicity and robustness are outstanding. One housing contains motor, automatic brake, gearing, steering, and control mechanism.

Wessex Industries (Poole) Ltd., West Street, Poole, Dorset

Foam pipe jacket is easy to fit

Made of flexible foamed plastic, a new insulating medium is easy to fit —it needs only a fraction of the time required by most materials. It is suitable for hot or cold pipes and conforms to any piping contours.

For new installations the material is sleeved on; for existing installations it is slit lengthwise, fitted, and sealed with a moisture-proof adhesive. Diameters are available to suit any standard size of pipe, copper or iron, from §in. to 3½in.

Armstrong Cork Co. Ltd., Armaflex Dept., Kingsbury, London N.W.9



Wish you had five heads?

Can you multiply 6,154 by 12.789 by 32.33 in a matter of seconds? Do you wish it were possible to write down the figures of any problem, and with a wave of a magic wand make the answer appear?

With an ORIGINAL-ODHNER Calculator this magic is possible.

It takes seconds to register the necessary figures—then, by turning a handle, the answer to your problem appears in black and white. With unbeatable simplicity it puts an end to all those hours of arduous calculating—and the extensions are right first time.

The ODHNER is portable, it can go with you to the office or to your home—in fact anywhere where figure-work needs solving. It's the modern method of calculating . . . and at a price you can really afford.



FROM £42



OFFICE EQUIPMENT DISTRIBUTORS (B.T.L.) LIMITED

(A subsidiary of British Typewriters Ltd.)

Head Office: Empire Works, Birmingham Road, West Bromwich. Tel. West Bromwich 2331. London Office and Showrooms: Empire House, 34–35 High Holborn, W.C.1. Tel. Holborn 0936. Stockists and Agents throughout the country



Machine gives choice of soft drinks

Soft still drinks are now sold from an automatic vending machine. It



What's yours?

holds three selections of soft drinks Lightfoot Refrigeration Co. Ltd., delivered in cartons, pre-cooled to

approximately 38 to 40 degrees.

Because of carton delivery, the machine is ideal for use in factories where it would be dangerous if glass bottles were left lying around. A carton disposal unit is obtainable as

Joseph Sankey and Sons Ltd., Hadley Castle Works, Wellington, Salop

Drinking water is always cool

Lukewarm water causes many complaints in factories and offices during hot spells or where the cold water pipe runs through warm atmospheres.

Water is always cool when it passes through a special unit. It consists of a tank, fed from the temperature by a refrigerating unit. All parts are of stainless steel. Capacities are available from 2 to 12 gallons.

Abbeydale Road, Wembley, Middx.

Cuts butter needs up to 20 per cent

Time-and butter-are saved by the Jadkin, a new hand-operated spreading machine. It consists essentially of a box which is charged with butter. As it is drawn over the bread.



Stainless steel spreader

mains, which is kept to a pre-set slight pressure on the trigger spreads a layer of butter evenly over the bread.

> Stainless steel is used throughout. The unit is easily washed.

Gaskell and Chambers Ltd., Coles Hill Street, Birmingham



OLYMPIA BUSINESS MACHINES COMPANY LIMITED

35 RED LION SQUARE, LONDON, W.C.I. TELEPHONE: HOLBORN 2274

D308A



HOW ARE YOUR BUSINESS NERVES TO-DAY?



You want important papers . . . vital information . . . a sample from laboratory or stores. How long does it take the nerve system of your business to react? How quickly do your requirements reach your desk and how much does it cost to get them there? Remember, your business organisation is just as strong as the link between its various sections. On the smooth flow of paperwork and materials its prosperity and progress depend. Lamson Carrier Tubes and Conveying systems provide the vital line of communications which enable your whole organisation to function at peak efficiency all the time. Why not consult Lamson (Dept. D.9) now?

CARRIER TUBES AND CONVEYORS

LAMSON ENGINEERING CO., LTD.

HYTHE ROAD, LONDON, N.W.10

Tel. LADbroke 2424

A member of Lamson Industries Group



The greatest enemy of efficient production-DUST, whether it is creating a fire risk, damaging machinery, blanketing heat and light, jeopardising health, ruining paint or causing extra labour can, unknown to you, gradually whittle down your profits. Eliminate dust with NEW WELBECK industrial suction cleaners -the most advanced and efficient machines on the market today. Your premises need NEW WELBECK to restore lost profits.

Write now for further information to Dept. 8. WE SERVE THE LEADERS OF INDUSTRY



The BRISTOL AEROPLANE company use NEW WEL-BECK industrial suction cleaners.

The 'DUPLEX' model cleaner in use inside an aircraft



m Cle

HEAD OFFICE & WORKS :

Moulsecoomb Way, Brighton, 7, Sussex Tel: Brighton 61666 (PBX) BRANCHES AT BIRMINGHAM, MANCHESTER, SCOTLAND & EIRE

Cavendish Square, London, W.1 Tel: LANgham 1517 (PBX)

SEPTEMBER, 1958

115

THE BARRYWALD BECAUSE -

Safety Automatic Incinerator

By the simple depression of a lever the Barrywald Sanitary Incinerator automatically destroys sanitary towels, surgical dressings, documents, etc.

It solves major and vital welfare and security problems in factories, offices, institutions, etc.

Write or 'phone today for illustrated leaflet or demonstration.



SANIGUARD APPLIANCES LIMITED

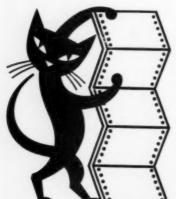
62, LONDON WALL, LONDON, E.C. 2

Delephone: NATIONAL 8881 8882 ALLIED METALS LYA

- ★ It is manufactured by the first and leading Sanitary Incinerator Specialists in the World.
- t is guaranteed for one year and backed by a full service organization.
- t is simple and cheap to install.
- It is the only Incinerator incorporating our patented safety devices.
- It is approved by the Royal Institute of Public Health and Hygiene.
- t is regularly supplied to and approved by all H.M. Government Departments, Local Administrations and Educational Authorities, Hospital Management Committees, General Industry.

Patents 555062-621085 and Foreign Pats.

ECONOMICAL
EFFICIENT
FOOLPROOF
INDISPENSABLE



CAT-TAB
Continuous
Stationery
for
Punched
Card and
Electronic
Tabulating
Machines

We are experts in the supply of specialised precision stationery, including multi-part sets and controlled feed carbon systems, for use on punched card and electronic tabulating machines.

May we tell you more about this? Write to:-

A. J. CATLIN LTD

SPECIALISTS IN CONTINUOUS AND CUT SET STATIONERY SYSTEMS

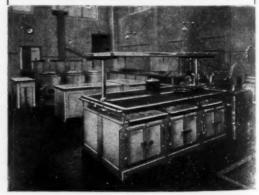
Jasper Rd · Westow Hill · Upper Norwood · London SE19 · Gipsy Hill 2258

COMPLETE KITCHEN INSTALLATIONS

—— by ———

JAMES
FARQUHARSON
& SONS LTD.

Park Parade, Harlesden, London, N.W.10.



BUSINESS

Kwick-dru

"The Towel that Really Dries-as the Name Implies"

PROTECT THE HEALTH OF YOUR STAFF



Supplied in rolls for AUTOMATIC CONTROLLED DELIVERY CABINET

These BETTER quality towels are very ABSORBENT and REALLY DRY and do not disintegrate when wet. They are CHEAPEST IN THE LONG **RUN** because released ONE AT A PULL from the cabinet there is NO WASTE.

"KWICK-DRY" PAPER TOWELS

Cut your Laundry Bills-Cut time-waste-Offer a fresh cream shade towel for every occasion—Remove infection dangers of the old communal towel — ARE STRONGER WET than dry— Conform to 1937 Factory Act.



is dispensed from

AUTOMATIC-CONTROL DELIVERY CABINET



No possibility of chapped hands or irritating queues as with expensive Hot-Air Drying Equipment.

Full details on application to Towel Dept.,

FREEDER BROTHERS PAPER MILLS

BRIMSDOWN MIDDLESEX Tel. HOWard 1847 (5 lines) Grams: Sylkocrepe, Enfield

SEPTEMBER, 1958



wil

One room-into four offices, it's as easy as that with Clifford Partitioning, the movern, pleasant to look at wooden partitioning that is specially designed to fit anywhere and to give maximum insulation against both noise and thermal conductivity.

Clifford Partitioning is divided into two basic designs; the Standard Partitioning and the Acoustic Partitioning, either of which is available with an exceptionally wide range of surface finishes incorporating decorative glazing, wood veneers, reeded hardboard, stove enamelled composite board or heat proof plastic.

board or heat proof plastic.

Under normal conditions erection time for Clifford Partitioning can be as low as one day per 80ft. run, whilst if alterations are required at a later date, it can be quickly and easily repositioned either for equipping new buildings or rearranging existing office space. Last but not least, Clifford Partitioning is surprisingly inexpensive and can be supplied in quantity for as little as 5/64d. per foot super.

Write now for out latest brochure which telfs you all about Clifford Partitioning, or, if you prefer, our representative will be pleased to call and discuss your partitioning problems.

INEXPENSIVE . FITS ANYWHERE . PREFABRICATED IN WOOD





249 BURLINGTON ROAD, NEW MALDEN, SURREY. Tel. MALden 1181-2-3-

Mobile Radio

Starts on page 70

improved service to their customers.

United Carriers are responsible for much of the meat transport in Britain, (especially in the London area). They are a co-operative, comprising many large and small firms who gain the advantages of a large undertaking but still preserve their individuality.

Their mobile radio pays for itself. It speeds up by many times the marshalling of vehicles alongside ships being unloaded at London docks. Yet it costs less per week than one driver's wages. It is hired from Marconi, and the only lump sum payment was the installation cost.

Here is how radio helps them:

Most of their vehicles in the London area are detachable trailers There the tractors deposit them and radio equipped tractor drivers in the go off to perform other tasks. There are hundreds in the docks, outnumbering tractors by about three to one. All of the tractors are fitted for radio, so that the six sets can be plugged into any vehicle, as required.

When a ship starts to unload it is surrounded by dozens of these trailers, under the charge of one United Carriers foreman. It is his duty to ensure that they are loaded correctly and efficiently. This calls for considerable redeployment of the trailers as the unloading proceeds, because many kinds of meat are stored in different holds: and a trailer may have to be moved several times before it gets its complete load.

All of this is achieved by one man -the foreman. Using a mobile radio plugged into the nearest convenient tractor, he passes information about the loading situation to United Carriers' central docks office. The hauled by tractors to their destina- Office gives him instructions and tions for loading and unloading, passes his messages to any of the

dock area.

The cars of the dock superintendent and assistant superintendent are similarly equipped. If a foreman requires their authority for a decision on loading arrangements he calls the central office; it calls the superintendents and receives their instructions if they are within six miles' radius Within minutes the foreman knows how to proceed.

Previously, a foreman or driver would have had to race to the nearest telephone and join the queue waiting to use it. The result then was a loss of valuable minutes or even hours.

The only significant installation cost was that of the aerial mast, 60ft, high, mounted on a United Carriers warehouse. Working from a 10-watt transmitter, this gives adequate power over the whole dock area.

Before installing vehicle-borne radio, the company experimented with walkie-talkies. Although these were of great assistance it was found



For breakdown of Material Lists &/or Billing and Part deliveries -

The segregation of Bought-Out Parts, Parts to be manufactured. Parts in Stock, and Castings, from their original higgledy-piggledy position on the Material List into condensed CONSECUTIVE ORDER is only a few moments work. By merely pressing buttons, separate lists, electronically in the condense of th pressing buttons, separate lists, electronically printed, are obtainable at one pass, with the added assurance of complete accuracy, thus effecting an ENORMOUS SAVING in clerical labour and

In a like manner, Invoice-Works Order sets especially where PART DELIVERIES are a common occurrance, is another application fo which the ORLID Selectronic is extensively used Call in an ORLID SYSTEMS TECHNICAL ADVISER—No obligation, no charge.

LINE SELECTING MACHINE



OFFICE EQUIPMENT DISTRIBUTORS (B.T.L.) LTD. (A subsidiary of British Typewriters Ltd.)

Head Office: Empire Works, Birmingham Road, West Bromwich, Staffs, Landon Office and Shawrooms: Empire House, 34-35 High Halborn, W.C.1.

Tel: West Bromwich 2331 Tel: Halborn 0936

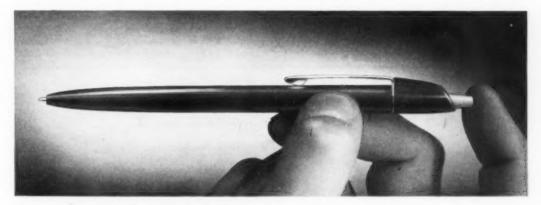
Branches - Agents - Service in ALL Principal Centres.

Starts fast, never clogs, writes non-stop!

it's the **By**

with exclusive silvered tip

Why do conventional ball pens sometimes start slowly and skip letters and words? Because the tip corrodes, causing the ink to clog. But the new EPIC has a unique silvered tip which cannot corrode. So with EPIC you get *instant* smooth ink flow . . . and *continuous* smooth writing.



Pens: 27/111d (inc. P.T.) per dozen. Refills: 18/101d (inc. P.T.) per dozen. Further quantity discounts.

Sold in packs of 12 of any one ink colour, Minimum trial order: 1 pack.

IT WRITES LIKE THIS

"The Epic is a strictly functional, strictly business-like ball pen for busy people. Guaranteed to give clear, clean, effortless writing—hour after hour, mile after mile."

The most efficient low-priced ball pen

• Non-fade ink withstands Ultra-Violet fading tests better than all other ball pens • Quickdrying ink (blue, red, green or black)—no smear or smudge • Simple 2-button retraction mechanism—no cap to remove or lose • Ink colour identified by matching retractor button • Each refill individually wrapped and sealed to reach you factory-perfect.

For supplies, write to:

EPIC BALL PENS, INGERSOLL HOUSE, DEPT. 42, KINGSWAY, LONDON, W.C.1

reliable because the many tall steel instructs the driver accordingly. structures around the docks absorbed much of their radiated power.

Internal Transport Eased

Davey, Paxman and Co. Ltd., Colchester, boiler and engine makers, have a comprehensive Pye mobile radio system which controls internal and external transport. The system is administered by a special transport controller to whom all drivers report. Here is an example:

hicle is a mechanical horse. Its driver is directed to various parts of the works by the transport controller, vehicles from various departments, do one job between two others. Radio has reduced the time taken for this vehicle to move materials by an average of half an hour per move-

by telephone that a load of castings is of William E. Cary Ltd., Blantyre the phone down is considerable. END

When the driver has deposited the trailer at the castings store, he tells the controller. The controller then phones the storekeeper who gives instructions for the loading of the trailer. As soon as loading is completed, the controller is informed. Again, he contacts the driver, who hauls the load to the machine shop.

In this way loads are promptly moved between departments. Equally important, loading bays are not obstructed for more than a few One radio-equipped internal ve- minutes by loaded tractors awaiting removal. Yet the driver spends a minimum of his time unproductively -the controller can contact him at who receives telephoned requests for any time and find out whether he can

Customer Appeal

Two-way radio has a definite cus-

that their range was limited and un-required in the machine shop. He Industrial Estate, Lanarkshire, who make and recondition vehicle springs.

> They recently installed Pye radio telephones in their fleet of lorries which collect broken springs from customers and deliver them repaired. All the customer has to do is pick up the phone, tell the Blantyre factory that they have a broken spring, and the nearest lorry is directed to them by radio.

> A 120ft, aerial mast erected on high ground near Glasgow, gives Cary's installation a range of 30 miles radius-covering about a third of the Scottish Lowlands. The transmitter, situated below the mast, is remotecontrolled from the factory by a Post Office landline.

The knowledge that Cary's use radio in this way brings home to customers the sort of quick service the company aims at. The psychological effect on a customer of seeing For instance, the controller is told tomer appeal. That is the experience a lorry drive up soon after he has laid

Produce first-class dyeline prints as you require them with the APOLLO MARK II



This is the ideal machine for use in organisations that do not require a full-time operator and it is equally efficient as a secondary unit in the busy print room. The APOLLO is compact, economical to run and requires a minimum of maintenance. It is instantly available for production and prints up to a maximum of 30in. x 40in. can be produced and developed immediately the original drawings are completed.

E. N. MASON & SONS LTD.

Arclight Works, Colchester, Essex

Telephone: Colchester 5191-8

LONDON : GLASGOW : MANCHESTER : BIRMINGHAM : LIVERPOOL : SHEFFIELD : LEEDS : BRISTOL 120 BUSINESS

Accounting in one Typewriting

"An essential unit for greater efficiency . . it types, it adds, it subtracts, it balances!"





Low inital cost



Consider this multi-purpose machine within your organisation, whether it be large or small, for it simplifies all accounting procedures, e.g. Sales Ledger, Purchase Ledger, P.A.Y.E., Invoicing, Cheque and Receipt Writing, Traders' Credit, and Hire Purchase Records, etc.

THE RUF ORGANISATION LIMITED

Central Buildings, Horley, Surrey. Telephone Horley 935 London office and showroom: OED, 33-35 High Holborn, W.C.1 Satisfy your interest—write for details or request a demonstration in your own offices without any obligation

A sign of **STATUS**



Single ivory/black model No. 447 with pen in choice of ivory, black or transparent holder 40/-. Other models and prices available through leading stores and stationers.

A good impression is often the beginning of good business. That's the reason why banks and the best hotels use Esterbrook Desk Pens—and in an office, an Esterbrook Desk Pen is a sure sign of status. On your desk, or that of valued business associates, it helps to create the aura of success.

Like the perfect secretary, the Esterbrook Desk Pen is efficient as well as attractive. Only clever design and knowing craftsmanship could give you a pen like this. It's always to hand, always ready to write, and writes more than a page without stopping. The smooth nib stays s-m-o-o-t-h.

Invisible assets too—non-spill base, marginal amount of maintenance, ink consumption that's almost negligible. Plus a whole range of nibs to suit the hand and job of everyone from junior executives to the Chairman.



Esterbrook - The really personal pur

THE ESTERBROOK PEN CO. LTD., MOLAND STREET BIRMINGHAM 4 TEL: ASTON CROSS 3191/2

To Expand Sales You **Must Study Habits**

Starts on page 89

To assume that the market cannot be attacked because it is dominated by two or three well-entrenched competitors is defeatism. But as complete a knowledge as possible of competitors' habits is essential. It will also enable you to anticipate what their next move is likely to be. and their reactions to yours.

4. Habits of the Product

What need or needs does it meet? Is it a fast, medium or slow turnover

Is it a speciality product?

Does it need a lot of servicing?

How long will it last?

How should it be designed to have of manufacturers in fields that are greatest appeal?

Does it come into the luxury, semiluxury or necessity class?

Are there any special features about the product which can be advantageously exploited?

To what degree can it be massproduced?

Does it take up a lot of space?

It is heavy or awkward to handle?

These factors, obvious though most of them are, need continual rethinking if their importance to production and sales policies is not to be overlooked.

5. Habits of Suppliers

A changing supply position, particularly of new synthetics or new equipment, can radically change your production programme, affect your forward planning and development of new products. While new products are not themselves the only road to expanding sales, they are sometimes essential to avoid a fall.

6. Habits of Other Manufacturers

By observing the changing habits not directly competitive, you may find that these sometimes develop in a way that is complementary to your own work and thus open up a new field for expanded sales. Equally, manufacturers of products that are now complementary to your own may develop new products that eliminate the appeal of your own.

7. Habits of Organized Labour

The strength of organized labour has sprung from bad management techniques in the past, and the only safeguard against industrial unrest is sound human relations.

The days when the closed door of the board room hid the reason why, have gone for ever. Management must prove that they are reliable managers of men and not merely expert poker players.

8. Habits of Governments

Governments are having much more effect today on market structures than ever before.

Domestic legislation concerning purchase tax, tariff barriers, monopoly controls, minimum standards and the decentralization of industry are typical examples of changing Government habits that must be taken into account. Moreover, overseas governments can with the stroke of a pen make drastic changes in our export markets. No marketing plan is complete unless all these factors are taken into consideration, or unless it is flexible enough to take advantage of every change in the situation.



a demonstration? If not, write TODAY to the address below.

PROTECTOGRAPH CHEQUE WRITER

HALSBY & COMPANY LIMITED SHAFTESBURY AVENUE, LONDON W.1.

DEPT. B.7., 52 DEAN STREET **GERRARD 4163**

RIGHT IN THE PICTURE



If an organization is one which portrays modern efficiency, then you will find that I.C.C. equipment is well to the fore. Should your business involve counting large amounts of coinage, speed is always essential, and our Vee-Three is the answer, as is also the E.90 Letter Opener, which allows so much more time for sorting and distributing mail. I.C.C. machines save untold time and money.



equipment demonstrated at the

BUSINESS EFFICIENCY EXHIBITION: STAND 94

International Coin Counting Machine &

17 Alexandra Road, Enfield, Middlesex Telephone: HOWard 3027.

At Last! REALLY FUNCTIONAL FURNITURE

Planned Offices Give Greater Working Area in Less Space



LOOKING at '846' Functional Furniture, one hesitates to call it just 'furniture,' because it does so much more than just furnish.

In fact, being 'tailor-made' - rather than 'ready-made' like ordinary furniture - it is really more in the nature of a raw material for efficiency, which can be fashioned by experts to make your office the place you want it to be.

How, you may ask, can '846' do this?

First, by saving space – a great deal of space. You can get more people into your office. And they will actually have more room to work in.

And, what matters just as much, '846' will make your office function with new speed, new orderliness, new control, new efficiency.

This is because the '846' furniture you use will have been built specially for you. Not just as to size and type of desk. But as to juxtaposition, flow of work, the whole geometric pattern of the office which can make or mar efficiency.

'846' is not merely a furniture. It is a plan. Yet '846' costs no more than ordinary 'ready-made' furniture.

The '846' plan works on different levels. It means purpose' built fitments within arms' reach of each worker. Deep or shallow drawers . . . card indexes . . . cupboards . . . suspended filing . . . anything you require. Beyond this, '846' creates an overall departmental system, built within the framework of necessary work sequences. You feed the work in one end. It emerges, completed, the other.

And, for the purposes of '846' planning, the size or type of business is immaterial. All you do is supply details of your space and number of workers (two, twenty, two thousand!). The rest is planned for you.

But first, why not look into '846' a little further? For details, just jot '846' on your letterheading and post to the address below.



SYSTEM OFFICE FURNITURE

THE SHANNON LIMITED

44 SHANNON CORNER : NEW MALDEN : SURREY

SHANNON Trade Mark

- 145A







THE SYSTEM CHOSEN BY

SO MANY **WORLD FAMOUS** NAMES

The Admiralty, Lloyds Bank, Ford Motor Co., I.C.I., Crosse and Blackwell, the B.B.C .- those are but a few of so many famous organisations who have chosen for their protection the-

BLICK WATCHMAN'S CLOCK

The advantages are overwhelming. With the Blick System you can see immediately, from the pattern of records, whether or not the Watchman is varying his route, setting off at different times each night, hurrying through his rounds or doing the job faithfully and well. Special Blick features include the 8-day clock movement and record chart; unlimited check stations; multi-colour stamping; instructions for making patrols in the way recommended by Scotland Yard; and a record book enabling you to see at a glance whether your orders have been obeyed.



SEND FOR FREE BOOKLET

Learn more about this great method of protection against fire and theft. Write today for the free 12 page booklet describing the unique Blick System. It's orth having.

BLICK TIME RECORDERS LIMITED 96/100 Aldersgate Street - London, E.C.1 MONarch 6256

In the Smaller Firm

A Pension For

The firm without a pension give its employees tax-free in the form of deferred

has recently produced a scheme whereby the smaller firm can the Inland Revenue as to the admissibility of treating the contributions as expenses for tax purposes.

The scheme is an adaptation of the provisions in the 1956 Finance Act whereby self-employed individuals and controlling directors of private companies can purchase deferred annuities and obtain full relief from tax on the premiums.

A man (or woman) born in 1916 to the assurance company. or later can obtain full relief from tax on a premium equal to 10 per cent of his annual earnings, subject to a maximum of £750. The permitted percentage contribution rises with the age of the contributor up to a maximum of 15 per cent or £1,125 for those born in 1907 or earlier.

Most of the publicity surrounding the 1956 Budget concessions was directed to the professional and selfemployed man, but the Act applies also to the employee who is covered any other arrangement. The Wes-

HE Wesleyan and General as a trading expense. With the writ-Assurance Co., Birmingham, ten consent of the employee, the premium is withheld from pay and remitted to the assurance company. provide any number of its employees Since the premium is an allowable with retirement benefits, without charge for the employee as well as having to enter into negotiations with the employer, the former will pay no more tax than before.

> If the employer does not wish to pay the maximum permitted premium on such a policy, for example, he may feel that a 5 per cent contribution is reasonable in relation to the individual's salary, the employee himself can arrange for a further 5 per cent (if born after 1916) to be withheld from his pay and remitted

> Are there any disadvantages in this scheme? For many employers the main weakness undoubtedly lies in the fact that the policy, i.e. the deferred annuity, is the property of the employee. Thus if he leaves, he takes it with him.

The deferred annuity compares unfavourably in some respects with the benefits of the usual group scheme approved by the Inland Revenue. For example, such schemes usually provide life cover so that in event of neither by a group scheme nor by the employee's premature death his dependants receive a lump sum, which leyan and General scheme has been may be converted into an annuity. devised especially for this latter group, With deferred annuities, premature many of whom are employed by death merely leads to the return of smaller concerns. The employer can the premiums to the deceased's dependecide for which employees he wishes ants, plus accrued interest. Obviousto effect policies. The appropriate ly, if the contributor dies young, premium for each is added to the those premiums don't add up to very wage or salary and the cost is allowed much! This weakness can be over-

by A. R. Ilersic

scheme can now Christmas bonuses pension policies

come, however, by the payment of a small additional premium whereby the contributor provides a pension for his wife if he should die prem-

More important, however, is the fact that many group schemes, especially for salaried employees, provide a pension which is related to the employee's final salary. In contrast, a deferred annuity can offer on the average life no more than the return of contributions plus interest. A merit of group schemes is that the permitted annual tax-free contribution can be up to 15 per cent of the employee's income, irrespective of his age. Furthermore, the employer gets tax relief on any payments to the fund needed to make up a deficiency arising either from the late entry of an employee or on account of infla-

Such an argument, however, is not relevant. The Wesleyan and General policies are not aimed at the big employer with the funded scheme, but at the small employer who cannot afford to set up a big scheme. They certainly provide useful facilities for the firm who may only want to provide key men with such benefits, whereas many group schemes cover all grades of staff. The employer also avoids being saddled with heavy additional charges to meet deficiencies on account of inflation.

Furthermore, the scheme is flexible, for in effect the contributor is merely taking out a series of single-payment annuities and his annual premiums





SAVES MARKING TIME

New Ofrex precision-made in-strument for marking, writing, painting, stencilling. As you write, so it dries with startling suddenness. Marks paper, china, metal, cloth, glass, plastic, etc. Full details Ref. B 221



CLEAN UP SPIRIT PROCESS WORK

No special fittings or adaptations or fluids need-ed with AZURITE, new Fordigraph chemical sheet for spirit process master making. Insoluble in water and therefore clean to handle and clean to use. Ref. B 152



KING SIZE Staples -

KING SIZE Savings

New Industria carton sealer eliminates wire strapping, glu-ing and taping—seals cartons securely in split seconds at a fraction of conventional costs. Full details Ref. B 528



TAPED AT 75

per minute

New I.T. automatic flat surface applicator unites well-tried economy of self-adhesive taping with flowline application method. Full technical details Ref. B 339

> To: OFREX GROUP CENTRAL INFORMATION SERVICE, Ofrex House, Stephen Street, London W.1 MUSeum 3686

> Please let me have more information about products ticked as under:

Ofrex Marker Carton Sealer ... 528 Azurite... Automatic Taper 339 Executive's name (Staple this to your letterhead) (B) O.G.12

SEPTEMBER, 1958



NEWS for Accountants! This SINGLE BOOK can hold ALL YOUR ACCOUNTS!

At last. A series of loose leaf standard units obtainable through your local stationers and suitable for every size of business.

All FIVE major books of account are streamlined into subdivisions of ONE portable volume called the FLOWLINE FIVE IN ONE UNIT. The same books are housed in two loose leaf volumes to form the FIVE IN TWO UNITS. All forms and indexes are supplied and simple directions are included with each outfit. Time, effort, space and cost are reduced and being loose leaf the book-keeping system can be altered or expanded as necessary.

Whether your book-keeping is a parttime job or is handled by a large Accounts Department, make certain you are aware of the advantages of this major step in loose leaf accounting designed and manufactured by a company with nearly 50 years of experience in this field.

Find out about



STANDARD LOOSE LEAF

now by sending the coupon below, attached to your letterheading, for full details free of obligation, and the name of your nearest stockist.



can easily be adjusted to his income. The employee thereby avoids being saddled with a heavy annual charge.

The scheme has similar attractions for the employer. It is always possible for him to extend his contributions in any particularly prosperous There are some interesting possibilities for firms which are in the habit of paying their employees regular bonuses. If no pension fund exists, the employee would benefit by the amount of tax payable on his bonus, if this were remitted as a premium for a deferred annuity. Admittedly, the benefit of the bonus is deferred, but for the better-paid employee this is a cheap way of saving. It appears to be one form of 'gift' which an employer can make at Christmas without attracting tax!END

Are Your Costs and Prices Realistic?

Does your thinking take account of changing values? So many things have gone up in price - labour, machinery, supplies, professional services and finished goods. This table, based on the retail price index, gives you a rough set of conversion factors for bringing your values up-to-date. For example, if you spent £100 on a machine in 1931, for which year the conversion factor is 2-89, then you could hardly be surprised if a similar machine now costs £289. It may actually cost more or less, but you would expect values generally to be around 2.8 times the 1931 level. This table will be brought up-to-date every quarter, but published monthly for handy reference.

Con-	Con-
version	version
Year Factor	Year Factor
1913 = 4.26	1935 = 2.96
1919 = 1.96	1936 = 2.89
1920 = 1.72	1937 = 2.75
1921 = 1.89	1938 = 2.72
1922 = 2.33	1939 = 2.64
1923 = 2.43	1946 = 1.77
1924 = 2.43	1947 = 1.68
1925 = 2.43	1948 = 1.55
1926 = 2.48	1949 = 1.51
1927 = 2.54	1950 = 1.47
1928 = 2.57	1951 = 1.34
1929 = 2.59	1952 = 1-23
1930 = 2-69	1953 = 1-20
1931 = 2.89	1954 = 1-17
1932 = 2.96	1955 = 1.13
1933 = 3.03	1956 = 1.07
1934 = 3.03	1957 = 1.03

Specialists in RECONDITIONING

STEEL and WOOD
Office Equipment

and all types of Upholstering



2 COAL WHARF ROAD SHEPHERD'S BUSH, W.12 SHE 2833 & 4081

GREATMET FLOORS

NEW FLOORS & FLOOR COVERINGS & PAVINGS

FLOOR & WALL TILING TERRAZZO

STAIRCASE WORK

OLD FLOORS
RECONDITIONED

BY MODERN MACHINERY

Day, Night, and Holiday Service
a Speciality

Expert craftsmen only employed

All work fully guaranteed

Flooring Brochure No. 2 free on request to

THE GREAT METROPOLITAN FLOORING CO. LTD.

73 Kinnerton Street, Knightsbridge S.W.1 SLDane 0047 (P.B.X.)

Selling to Poland

Starts on page 79

of all types, from managers in the large State factories to the owners of one-man businesses. (These still exist in Poland and often provide a vital service to larger firms.)

All were extremely interested in the Autopak and said they would like to buy it because nothing like it was available in Poland. (A Swedish machine at the Fair was approximately twice the price.) The trouble was, they had very little money, so they resorted to very hard bargaining. But Mr. Fielder soon learned that anyone who tries to sell anything to Eastern Europe must be prepared to defend his advertised prices. By an unfortunate coincidence the Fair is held at a time when most industries have spent their import allocations, so orders for exhibits are often not placed for several months.

Government Services

British exhibitors were often able to settle problems on the spot by discussion with officials of the Board of Trade, who had a stand at the Fair. But the feeling among many exhibitors was that the Government, by advancing long-term credits to Poland, could change overnight the whole trade picture.

Accommodation

In Mr. Fielder's case this was excellent but his experience may not have been representative. Hotel accommodation everywhere is scarce because war destruction has not been made good. For the Fair, the authorities arrange special accommodation in private houses in Poznan and Mr. Fielder could not have been more comfortable. Hotel accommodation in Warsaw is excellent but limited.

Reliability

It may be some time before Rock-weld can measure the full benefit of exhibiting at Poznan. But Mr. Fielder gained the impression, confirmed by others, that although the Poles are hard bargainers and short of sterling, when they do place an order they are reliable payers.

EFFICIENCY IN STORE





EVERTAUT LTD., (Dept. S2) WALSALL ROAD, PERRY BARR, BIRMINGHAM 22b

Telephone BIRchfields 4587

0

Taylors

FOR TYPEWRITERS

To many people, the name Taylors is synonymous with the word typewriters. There is a simple reason. Taylors have been selling and servicing typewriters since 1884. They really know the business.

Taylors can give advice without pre-judice. They are not bound to one particular manufacturer's products they are free to sell the make most

suitable for your needs.

There are a few good typewriters on the market today and, of course, some are better than others. That is where Taylors expert and unbiased advice is so beneficial to their customers.

After all, the operator wants a typewriter with a light and responsive touch, one that will produce a neat letter. And the machine should be as trouble-free as human ingenuity can make it.

TAYLORS are the people. The next time you require a typewriter, electric, standard or portable, try TAYLORS-HOLborn 3793. You can have a machine on trial without any obligation what-

Like every mechanical instrument, even the best typewriter might break down at times. On these occasions you need prompt and reliable service. Again, Taylors are the people.

And it's worth noting that Taylors have a complete Hire Service

NEW AND REBUILT TYPEWRITERS

*For Sale and Hire. First Class Service.

In addition to typewriters Taylors are equally good for adding, accounting and calculating machines. In fact they offer a complete office machine service.





Illustrated are examples of the machines we sell and service - the full range is very comprehensive, so consult TAYLORS for all Typewriters and office machines.

It all adds up to TFYLORS FOR TYPEWRITERS and other office machines.

TAYLORS TYPEWRITER CO. LTD.

74 Chancery Lane (Holborn End), London, W.C.2. Telephone: HOLborn 3793 (6 lines) and at 83 Queen Street, Maidenhead

PARK YOUR CYCLES THE ODONI WAY

(REGD. TRADE MARK)

With Odoni Patent "All-Steel" BICYCLE STANDS

Types to suit all possible requirements
Single or Double-Sided. Horizontal or Semi-Vertical



TYPE 10

DOUBLE SIDED SEMI-VERTICAL OUTDOOR STAND, BUILT WITH CLOSE RACK ARRANGE-MENT (CYCLES AT 12" CENTRES)

Write for fully illustrated leaflet and price list to Sole manufacturers and Patentees.

ALFRED A. ODONI AND CO. LTD. SALISBURY HOUSE, LONDON WALL, LONDON, E.C.2

Tel. No.: (WORKS: LONDON, N.W.) Tel. Add.: NATional 8525/6 Odani. Ave., London

The Polytechnic, Regent Street, W.1

DEPARTMENT OF MANAGEMENT STUDIES

Term commencing 22nd September, 1958

DAY Work Study

COURSES Work Simplification in the Office

Modern Incentive Schemes European Common Market Restrictive Trade Practices

The Social Skills of Management Effective Speaking

Report Writing Chairmanship and Committee Work

Management Accounting Management of Sales Organisations

Problems of Marketing Policy Financial Background for Policy Making Commercial and Industrial Forecasting Presentation of Accounting Information

EVENING Intermediate Certificate and Diploma in Management

COURSES Communication in Management Organisation and Methods Management Control Through Accounting The next ten years in American Marketing

Prospectuses may be obtained from the Registrar, Department of Management Studies (Group A), St. Katharine's House, 194 Albany Street, London, N.W.1.

APPOINTMENTS VACANT
REPRESENTATIVES WANTED calling on
factories. Hospitals and Local Authorities by
London Office Furnishers. Remuneration by
liberal commission. Box 1508. c/o 'Business',
199 Waterloe Road, S.E.1.

BUSINESS OPPORTUNITIES

Mailing? 19,412 Chartered Accountants. 43,592 large Factories. Addressing, enclosing and despatching Literature.—I.M.S., 81 Blackfriars Road, London, S.E.1.

CANTEEN EQUIPMENT

Catering Equipment Consultants & Stockists. Northern Kitchen Equipment Company Limited. Wicker Arches House, Sheffield 4. Tel. 26516/7.

COMMERCIAL CATERING EQUIPMENT Co. Ltd. For planned kitchens and canteens. New or reconditioned equipment available. Renta facilities. 29 Abingdon Road, London, W.8 Telephone WEStern 0936.

DUPLICATE BOOKS

BETTER DUPLICATE BOOKS AT LOWER PRICES. Specialist equipment enables us to pro-duce attractive, specially-printed duplicate books at amazingly low prices. List free. Browns Ltd., Caldervale Works, Burnley, Lancs.

FOR SALE

"Addressograph" Machines (rebuilt-guaran-ised), Cabinets, Frames, plates and accessories, Nevard Dessoy & Co. Ltd., 102-105 Shoe Lans. Lendon, E.C.4.

KARDEX, RONEODEX & SHANNOVUE CABINETS, as new. F. H. Jolly & Co. Ltd., 289 King Street, London W.6. RIV 5381.

FULL STEAM IN FIVE MINUTES with B. & A. Electrode Boilers. Used by British industries for 20 years. No bo lerhouse, no flue, no attendant needed. The most compact and convenient steam raisers available, can go beside machines using the steam. Write for leaflet 107, Bastian & Allen Ltd., Ferndale Terrace, Harrow.

STENORETTE Dictating Machine Office Equipment. Our activities are devoted solely to the sale and service of Stenorette equipments and the sale and service of Scenorecte equipments and our service agreement ensures continuous use without recourse to Manufacturers. We are unique in this respect, so send your next enquiry to the Stenorecte Specialists, 227 Oxford Road, Manchester 13. Tel. ARDwick 426.

180 bays of brand new adjustable steel shelving, 72in. high x 34in, wide x 12in. deep, stove enamelled, dark green, sent unassembled, six-shelf bay, £3 15s.; sample delivered free: quantity discounts. N. C. Brown Ltd., Eagle Steelworks, Heywood, Lancs. Tel. 69018.

ADDRESSOGRAPH MACHINE, Metal Plate Model, equal new 225. Olivetti Typewriter 210. Neopost Franking Machine 215. Cheque Pro-tectograph Machine 25. National Cash Register Electric 225. Maxarc Electric Welder 240. Berry House, Telephone Chilham 307. Canterbury,

IN FILING & LOOSE LEAF EQUIPMENT ONERS TRADE LOOSE LEAF CO. LTB. BIRMINGHAM 12.

ONE-TIME-CARBON SETS

O In Unit or Continuous form o

A specimen set or form posted to us for quoting will point to a saving in your printing costs . . .

LIBERTY PRINTERS

(A.R. & R.F. REDDIN) LTD. SUNNYHILL ROAD, STREATHAM O LONDON, S.W.16 STReatham 7067 BURROUGHS BOOKKEEPING MACHINE class 221356½, 1952 vintage. Hertford. Telephone 2471.

New "Kardex" visible record cabinets, 22 tray Sin. x 3in. capacity 1562 cards. All in original packing cases. Current list price is 80 each, but we offer thirty cabinets at £30 each. D. Matchews & Son Limited, Office Furnishers, 61-63 Dale Street, Liverpool 2.

Adrema Cabinets for storage of 3R plates; excellent condition; each complete with 60 trays; £30 each. Sent on approval. Mailers Supplies and Services, 49 Tattenham Grove, Epsom

Number of small and medium sized safes for sale. Apply Accountant, Beecham Pharmaceuticals Limited, St. Helens.

BURROUGHS DUPLEX ACCOUNTING Machines. Up to five machines for sale, cheap after reorganisation: well maintained by makers and available in Glasgow. Write 1571 Wm. Porteous available in Glasgi and Co., Glasgow.

Dismantling cash tube system in October — what offers for 5 h.p. electric blower, motor, tubes, sub-stations, etc.? Box No. 1506, c/o 'Business', 103 Waterloo Road, S.E.1.

ELECTRIC TYPEWRITER. Latest model Remington 13in, with repeater and alternative paper tape and ordinary ribbon. Cost £178 February. £125. Seen Strand. Apply Box No. 1507. c/o "Business", 109 Waterloo Road, S.E.1.

MISCELLANEOUS

Companies advertising for staff can get the benefit of a Specialist Service for their small ads. from R. F. White & Son Ltd., 72/78 Fleet Street, The oldest advertising agency in the world FLE 8311/5.

Press and Public Relations Consultants for Midland and Northern Industry Continuous Compaigns Short Term Assignments Organisation bil New Product Releases Press Conferences Editorial Material

Competent Advice upon an Increasingly Importa Activity—Backed by the Design Resources of THE TOON & HEATH ORGANISATION Knowle 3355-6 1266 Warwick Road - Knowle - Warks.

MORTGAGES Mortgages, Re-Mortgages and 2nd Mortgages on all type of properties. Particulars: Spencer, 36 Spencer House, Cambridge Road, London N.W.6.

WANTED

Addressograph equipment complete, and/or Cabinets, frames, accessories etc. Box No. 1352 c/o BUSINESS,109/119 Waterloo Road, S.E.I.

Kardex etc. OFCO. VIC 2912.

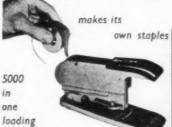
REBUILT ACCOUNTING MACHINES

for prompt delivery. All equipment fully guaranteed for one year. Maintenance service available on expiry of guarantee. Free preparation systems, training of operators and installation services.

H. H. DURHAM LTD.

85 BLACKFRIARS ROAD, LONDON, S.E.1 Tel. WATerloo 6081-2

BATES STAPLER saves time cuts office costs



MAGOWAN & CO. LTD., WOLVERHAMPTON

70/- complete

CALCULATING SERVICES

LTD.

Machine Operating Experts

We undertake all kinds of adding, calculating and statistical figure work including STOCK SHEETS, ESTIMATES etc. Many large and small firms throughout Great Britain use our service. If interested send for brochure C.S.6.

LONDON OFFICES 130 Crawford Street, at Baker Street, W1 Tel. WEL 4328. Miss Harper

BIRMINGHAM OFFICES
Albert Street, 4. Tel. CEN 6541.
iss Tomalin. (Established 25 years)

SURREY OFFICES 12 High Street, Epsom. Tel. EPSom 4131

> COMPTOMETERS HIRED Long or Short Periods

Travelling Salesman's "Blue-Print" to Success Gulliver's "film-Print" is an organized plan, in tabloid form, of progressive salesmanship. The whole course, simple to follow, describes in eight steps how it is possible to double asles within two years. Complete for only one guinea, it can change your whole financial outlook. Send P.O. 21s. to Guiliver's Salesmanship, 1 Shiping Road, Leicaster. Satisfaction guaranteed or money refunded.

reaching a receptive market . . .

The SHOOTING TIMES

Read by those who can afford to shoot . . . and enjoy the nicer things in life.

*Write for a current copythat you may see the good company we keep.

The BURLINGTON PUBLISHING CO LTD 29 OLD BOND STREET . LONDON, WI Telephone Hyde Para 2556



E

Musticated catalogue PRESTONS LIMITED

BUSINESS AND INDUSTRIAL DEPUNCHED CARD SYSTEMS COPEIANCE OF HEALEST CO. 115 COPEIAND-CO. 33

					Ltd 60
ACCOUNTING MACHINES Bulmer's (Calculator	s) Ltd. 88	CALCULATING SERVICES Calculating Services Ltd 129	ELECTRIC CLOCKS Dictograph Telephones 64 Gent & Co. Ltd 2	MOTOR CARS Capital Motor Co. Ltd 56	ROTARY REPRODUCER Rotaprint Ltd 90
Burroughs Adding M	lch 20		IBM United Kingdom Ltd.	NOISE BREVENITION	******
National Cash Regist Remington-Rand Ltd	er 97, 107		(International Time	NOISE PREVENTION	SAFES Chubb & Son's Lock & Safe
RUF Organisation La	d 131	CANTEEN EQUIPMENT	Recording Division) 83	Burgess Products Ltd 15	Co. Ltd 41
NOT Organisation Li	121	Bartlett, G. F. E., Ltd 46	Smith's English Clocks 16		Remington Rand Ltd. 37.84
		Farquharson, James, & Sons		OFFICE FURNITURE	Kemington Kand Ltd. 37.84
ACCOUNTING S	-WETTHE	Ltd 116	ENVELOPES	RENOVATION	SEATING
Art Metal Construct	TSIEMS		Dickinson, John, & Co. Ltd. 32	Office Equipment Renova-	Dare-Inglis Products Ltd. 29
Carter-Davis Ltd	109		Dickinson, John, & Co. Ltd. 32 Wesley, Harold, & Co. Ltd. 102	ting Co. Ltd 126	Leabank Office Equipment
Coneland Charrens	a Co 33	CASH REGISTERS			Ltd 44
Kalamazoo Ltd Lamson Paragon Ltd	31	National Cash Register 97, 107	FACTORY EQUIPMENT		STAFF LOCATION
Lamson Paragon Ltd.	95		AND ACCESSORIES	OFFICE FURNITURE	SYSTEMS
Powers-Samas Ltd Roneo Ltd.		CHARTS AND PLAN	Constructors Ltd 12	(STEEL) Art Metal Construction 99	Blick Time Recorders Ltd.
Roneo Ltd	123	BOARDS	Constructors Ltd 12 Sankey-Sheldon Ltd 53	Constructors Ltd 12	13,124
	ar are take	Block & Anderson Ltd. 36,55		Dare-Inglis Products Ltd. 29	Dictograph Telephones
		Remington-Rand Ltd. 37, 84		Evertaut Ltd 127 Harvey, G. A., & Co. Ltd. 35	Ltd 64 Gent & Co. Ltd 2
ACOUSTIC CEIL	INGS		FILING AND VISIBLE RECORD SYSTEMS	Harvey, G. A., & Co. Ltd. 35	Gent & Co. Ltd 2
Burgess Products Ltd	d 15		Art Metal Construction 99	Leabank Office Equipment	STEEL STORAGE
		CHEQUE WRITER	Block & Anderson Ltd. 36,55	Ltd 44 Rubery Owen & Co. Ltd 42	EQUIPMENT
		Halsby & Co. Ltd 56, 122	Bulmer's (Calculators) Ltd. 88	Sankey-Sheldon Ltd 53	Baxter, Fell & Co. Ltd 58
ACOUSTIC ENG	INEERS		Carter-Parratt Ltd 108	Vickers-Armstrongs	Constructors Ltd 12
Burgess Products Ltd	d 15		Constructors Group 12	(Engineers) Ltd 57	Copeland-Chatterson Co. 33
		CINE EQUIPMENT	Copeland-Chatterson Co. 33		Gascoigne, Geo., Co. Ltd. 43
		Rank Precision Industries	Evertaut Ltd 127 Expandex Visible Filing Co.	OFFICE FLIPALITATION	Harvey G. A. Ltd. 35
ADDING MACHI	INES	Ltd 30	Ltd 102	OFFICE FURNITURE	Evertaut Ltd
Adwel Adding Machi	ines		Jetleys (Gt. Britain) Ltd 51	Cateshys Ltd 18 63	Rubery Owen Ltd 42
Block & Anderson Li	23	CLOAKROOM	Jones, Percy, Ltd 131	Globe-Wernicke Ltd 101 Gold Seal Furnicure 61 Mason, E. N., & Sons 120	Sankey-Sheldon Ltd 53
Block & Anderson Li	id. 36,55	EQUIPMENT	Raiamazoo Ltd 31	Gold Seal Furniture 61	Westwood, Jos., & Co. Ltd. 103
British Olivetti Ltd Bulmer's (Calculator	48, 49 s) Ltd. 88	Constructors Ltd 12	Lamson Paragon Ltd 95	Mason, E. N., & Sons 120	
Burroughs Adding M	ich 20	Harvey, G. A., & Co 35	E. N. Mason & Sons Ltd 120	Shannon Ltd 123	STOP WATCHES
Burroughs Adding M Comptometer Ltd. (Great	Rubery Owen & Co. Ltd 42	Sankey-Sheldon Ltd. 37,84		Prestons Ltd 129
Britain)	27	Westwood, Joseph, & Co.	Remington-Rand Ltd. 95 Remington-Rand Ltd. 37, 84 Sankey-Sheldon Ltd. 53 Shannon Ltd. 123	OFFICE REQUISITES	
National Cash Regist	ter 97,107	Ltd 103		AND SUPPLIES	TELEPHONE AMPLIFIERS
Sumlock Ltd	93			Ofrex Ltd 125	AND ACCESSORIES
		COIN COUNTING	FINANCE		Fonadek (Branson) Ltd III
ADDRESSING		MACHINES	Industrial & Commercial Finance Corp. Ltd 45	OVERALLS	Magowan & Co. Ltd 129
ADDRESSING HA	CHINES	International Coil Count-	rinance Corp. Ltd 45	Wheeler, H., & Co. Ltd 132	
Addressall Machine (Block & Anderson La	d 36 55	ing Machine Co. Ltd 123		PACKING	SOUND EQUIPMENT
Roneo Ltd	=		FIRE ALARM SYSTEMS	Gordon & Gotch Ltd 38	Dictograph Telephones Ltd. 64
		COLLEGES AND	Gent & Co. Ltd 2	Reed Corrugated Cases Ltd 54	
		COURSES	Siemens Edison Swan Ltd. 50	Universal Pulp Containers	Siemens Edison Swan Ltd
ADDRESSING M	ACHINE	Polytechnic, The 128		Ltd cover iv	
ATTACHMENT		Tack School of Salesman-	FIRE EXTINGUISHERS		TELEPRINTER
Fantoid Ltd	104	ship 14	Nu-Swift Ltd 4	PARTITIONING	Creed & Co. Ltd 19
Fanfold Ltd. Lamson Paragon Ltd Smith, W. H., & Son (Alacra) Ltd.	73			Art Metal Construction 99	
(Alacra) Ltd		CONDENSERS	FLOORING	Clifford Partitioning Co.	TEMPERATURE
		Telegraph Condenser Co.	Gt. Met. Flooring Co 126	Ltd 117 Constructors Ltd 12 Sankey-Sheldon Ltd 53	Smith's English Clocks 16
		Ltd cover ii		Constructors Ltd 12	Smith's English Clocks
ADVERTISING G				Sankey-Sheldon Ltd 53	
Sculthorp, R., & Co.	Ltd 62		FOLDING MACHINES		TICKET PRINTING
		CONTINUOUS	Block & Anderson Ltd. 36,55	PENS AND PENCILS	MACHINES
		STATIONERY		Eagle Pencil Co 102, 103	IBM United Kingdom Ltd. (International Time
ASSURANCE		Carter-Davis Ltd 109 Catlin, A. J., Ltd 116	HEALTH SERVICES		Recording Division) 83
Legal & General Ass	urance	Copeland-Chatterson Co. 33	Freeder Brothers 117 Saniguard Appliances —	Esterbrook Hazell Pens	
Society	32	Egry Ltd	Saniguard Appliances	Ltd 121 Venus Pencil Co 60	TIME RECORDERS
		Fanfold Ltd 104		venus Pencii Co 80	
1 av 2 marga (3 t t 2		Hunt & Colleys Ltd 62	INDUSTRIAL CLEANING	BENGLON	
BOOKS AND		Lamson Paragon Ltd 95	Lamson Engineering Co 115 New Welbeck Ltd 115	PENSION	Gent & Co. Ltd 2 IBM United Kingdom Ltd. (International Time
PUBLICATION		Petry & Sons Led 129	TIS	The Noble Lowndes Pen-	(lessenational Time
Pitman, Sir Isaac, &	30NS 422	Fanfold Ltd. 104 Hunt & Colleys Ltd. 62 Lamson Paragon Ltd. 95 Liberty Printers Ltd. 129 Petry & Sons Ltd. 58 Smith, W. H., & Son (Alacra) Ltd. —		sion Service 9	
Ltd	132	(Alacra) Ltd	INSURANCE BROKERS		Servis Recorders Ltd 110
			Vulcan Boiler & General	PHOTOGRAPHIC	
	No. 7 m		Insurance Co. Ltd 101	REPRODUCING	TYPEWRITERS AND
BROADCAST MI		CYCLE PARKS		EQUIPMENT	ACCESSORIES
Dictograph Telepho	nes 64	Constructors Ltd 12	LETTER OPENING	Block & Anderson Ltd. 36,55	British Olivetti Ltd 48, 47
		Constructors Ltd 12 Odoni, Alfred A., & Co 128	MACHINES	Hord Ltd 40 Kodak Ltd 59	
			Block & Anderson Ltd. 36,55	Kodak Ltd 59 Mason, E. N., & Sons Ltd. 120	tors (B.T.L.) Ltd 113, 118 Oliver Typewriter Mfg.
BUSINESS ACC	ESSORIES	DICTATING AND	International Coin Count-	Rank-Xerox Ltd 34	Oliver Typewriter Fits.
Coombs, H. A., Ltd.	103	RECORDING	ing Machine Co. Ltd 123		Olympia Business Machines
		EQUIPMENT			[rd
		E.M.I. Sales & Services Ltd. 24	LOOSE LEAF LEDGERS	PNEUMATIC TUBE	Barriages Band Itd 37.09
CALCULATING		E.M.I. Sales & Services Ltd. 24 Grundig (Gt. Britain) Ltd. 10	AND SYSTEMS Art Metal Construction 99	2121FW2	Taylors Typewriter Co. Ltd 128
MACHINES		Remington-Rand Ltd. 37,84	Copeland-Chatterson Co. 33	Lamson Engineering Co.	
Block & Anderson L	.td. 36,55		Jones, Percy (Twinlock) 131	Ltd 115	VENTILATING
British Olivetti Ltd. Bulmer's (Calculator	48, 49		Kalamazoo Ltd 31		EQUIPMENT
Bulmer's (Calculator	rs) Ltd. 86	DUPLICATING	Kalamazoo Ltd	PRINTERS AND	Colt Ventilation Ltd. 52.87
Burroughs Adding P Comptometer Ltd.	15-case	MACHINES Block & Ancerson Ltd. 36, 55		STATIONERS	THE THE PARTY OF T
Britain)	27	Block & Ancerson Ltd. 36,55 Bulmer's (Calculators) Ltd. 88	Ltd 126 Shannon Ltd 123	Petty & Sons Ltd 129	WATCHMEN'S CLOCKS
Office Equipment D	iscrib-	Office Equipment Distribu-	123	y as some city 38	Blick Time Recorders 13.124 Gent & Co. Ltd
utors (B.T.L.) Ltd.	113, 118	tors (B.T.L.) Ltd 113, 118			IBM United Kingdom Ltd.
Britain) Office Equipment Di utors (B.T.L.) Ltd. Remington-Rand Ltd. Sumlock Ltd.	1. 37.	Remington-Rand Ltd. 37,84 Rotaprint Ltd 90	MARKING EQUIPMENT	PRINTING MACHINES	
Sumlock Ltd	73	NOLE PRINT LEG 90	Cushman & Denison Ltd. 110	Rotaprint Ltd 90	Recording Division) 33
120					



any requirement

Multi-part stationery sets are being used more and more in the modern office of to-day. The quick and simple separation of carbons from copies saves much time and aids office efficiency. It is clean and comparatively low in price.

Ideal for use in Order, Despatch, Accounts Departments etc.

Ask your Stationer or Printer for a sample Twinlock "Snap Apart" Stationery Set and see how valuable an asset it would be in your office.





PERCY JONES (Twinlock) LTD. 37 CHANCETY LANE, LONDON W.C.2 SHOWROOMS: GLASGOW, MARCHESTER & BIRMINGHAM MED OFFICE & FACTORIES: BECKENHAM, RENT

SEPTEMBER, 1958

BUSINESS

CLASSIFIED BUSINESS AND EQUIPMENT

ACCOUNTING MACHINES	CALCULATING	E
Bulmer's (Calculators) Ltd. 88 Burroughs Adding Mch 20 National Cash Register 97, 107 Remington-Rand Ltd. 37, 84	Calculating Services Ltd 129	18
National Cash Register 97, 107 Remington-Rand Ltd. 37, 84 RUF Organisation Ltd 121	CANTEEN EQUIPMENT Bartlett, G. F. E., Ltd 46 Farquharson, James, & Sons	Sn
	Farquharson, James, & Sons Ltd 116	
ACCOUNTING SYSTEMS Art Metal Construction 99		0
Copeland-Chatterson Co. 33	CASH REGISTERS National Cash Register 97, 107	W
Lamson Paragon Ltd 95 Powers-Samas Ltd 95		F/
Roneo Ltd 123	CHARTS AND PLAN BOARDS	Sa
The same of the sa	Block & Anderson Ltd. 36,55 Remington-Rand Ltd. 37,84	F
ACOUSTIC CEILINGS		-
Burgess Products Ltd 15	CHEQUE WRITER	Bi
	Halsby & Co. Ltd 56,122	81
ACOUSTIC ENGINEERS Burgess Products Ltd 15		C
burgess Froducts Etd 15	CINE EQUIPMENT	000
	Rank Precision Industries	Ex
ADDING MACHINES Adwel Adding Machines Ltd 23		Je
Black & Anderson Lad 36 CC	CLOAKROOM	Ja K
British Olivetti Ltd 48, 49 Bulmer's (Calculators) Ltd. 88	Constructors Ltd 12	L
Burroughs Adding Mch 20	Harvey, G. A., & Co 35	E.
Comptometer Ltd. (Great	Westwood, Joseph, & Co.	Sa
National Cash Register 97, 107 Sumlock Ltd 93	Ltd 103	SI
	COIN COUNTING	In
ADDRESSING MACHINES	MACHINES	in.
Addressall Machine Co 47	International Coil Count- ing Machine Co. Ltd 123	
Block & Anderson Ltd. 36, 55 Roneo Ltd		F
	COLLEGES AND	Si
ADDRESSING MACHINE	COURSES	31
ATTACHMENT	Polytechnic, The 128 Tack School of Salesman-	F
Fanfold Ltd 104 Lamson Paragon Ltd 95	ship 14	N
Lamson Paragon Ltd 95 Smith, W. H., & Son (Alacra) Ltd		
(Alacra) Ltd	CONDENSERS	F
	Telegraph Condenser Co. Ltd cover ii	9
ADVERTISING GIFTS		F
Sculthorp, R., & Co. Ltd 62	CONTINUOUS	BI
	STATIONERY	
ASSURANCE Legal & General Assurance	Carter-Davis Ltd 109 Catlin, A. J., Ltd 116 Copeland-Chatterson Co. 33	Fr
Society 32		Sa
	Fanfold Ltd 104	
BOOKS AND	Hunt & Colleys Ltd 62 Lamson Paragon Ltd 95	II.
PUBLICATIONS		N
Pitman, Sir Isaac, & Sons Ltd 132	Petty & Sons Ltd 58 Smith, W. H. & Son	
Ltd 132	Petty & Sons Ltd 58 Smith, W. H., & Son (Alacra) Ltd	V
BROADCAST MUSIC	CYCLE BARKS	
BROADCAST MUSIC Dictograph Telephones 64	CYCLE PARKS Constructors Ltd 12	L
	Constructors Ltd 12 Odoni, Alfred A., & Co 128	BI
		[n
BUSINESS ACCESSORIES Coombs, H. A., Ltd 103	RECORDING	
	EQUIPMENT E.M.I. Sales & Services Ltd. 24	L
CALCULATING MACHINES	E.M.I. Sales & Services Ltd. 24 Grundig (Gt. Britain) Ltd. 10	A
	Remington-Rand Ltd. 37,84	-
Block & Anderson Ltd. 36, 55 British Olivetti Ltd 48, 49		Jo K
British Olivetti Ltd 48, 49 Bulmer's (Calculators) Ltd. 86 Burroughs Adding Mch 20	DUPLICATING MACHINES	La
Comptometer Ltd. (Great	Block & Ancerson Ltd. 36.55	N
Britain) 27	Bulmer's (Calculators) Ltd. 88	SH

BUSINESS	RUSINESS AN	GUIDE TO D INDUSTRIAL	HANDLING Lamson Eng. Co 115	SYSTEMS Copeland-Chatterson Co. 33
· JOURNAL OF HARAGENESS!	EQUIPMENT	& SERVICES	MICROFILM CAMERAS Kodak Ltd 59	CARBONS AND CARBONS Columbia Ribbon Mig. Co.
ACCOUNTING MACHINES Bulmer's (Calculators) Ltd. 88	CALCULATING SERVICES Calculating Services Ltd 129	ELECTRIC CLOCKS Dictograph Telephones 64 Gent & Co. Ltd 2	MOTOR CARS Capital Motor Co. Ltd 56	ROTARY REPRODUCER Rotaprint Ltd 9
Burroughs Adding Mch 20 National Cash Register 97, 107 Remington-Rand Ltd. 37, 84 RUF Organisation Ltd 121	CANTEEN EQUIPMENT Bartlett, G. F. E., Ltd 46	IBM United Kingdom Ltd. (International Time Recording Division) 83 Smith's English Clocks 16	NOISE PREVENTION Burgess Products Ltd 15	SAFES Chubb & Son's Lock & Safe Co. Ltd
ACCOUNTING SYSTEMS Art Metal Construction 99	Bartlett, G. F. E., Ltd 46 Farquharson, James, & Sons Ltd 116	ENVELOPES Dickinson, John, & Co. Ltd. 32 Wesley, Harold, & Co. Etd. 102	OFFICE FURNITURE RENOVATION Office Equipment Renova- ting Co. Ltd 126	SEATING Dare-Inglis Products Ltd. 1 Leabank Office Equipment
Carter-Davis Ltd 109 Copeland-Chatterson Co. 33 Kalamazoo Ltd 31 Lamson Paragon Ltd 95	CASH REGISTERS National Cash Register 97, 107	FACTORY EQUIPMENT AND ACCESSORIES	OFFICE FURNITURE	STAFF LOCATION SYSTEMS
Roneo Ltd — Shannon Ltd 123	CHARTS AND PLAN BOARDS Block & Anderson Ltd. 36, 55 Remington-Rand Ltd. 37, 84	Constructors Ltd 12 Sankey-Sheldon Ltd 53	(STEEL) Art Metal Construction 99 Constructors Ltd 12 Dare-Inglis Products Ltd. 29 Evertage Ltd. 127	Blick Time Recorders Ltd. 13,12 Dictograph Telephones Ltd
ACOUSTIC CEILINGS Burgess Products Ltd 15	CHEQUE WRITER	FILING AND VISIBLE RECORD SYSTEMS Art Metal Construction 99 Block & Anderson Ltd. 36,55	Evertaut Ltd 127 Harvey, G. A., & Co. Ltd. 35 Leabank Office Equipment Ltd 44	STEEL STORAGE
ACOUSTIC ENGINEERS Burgess Products Ltd 15	Halsby & Co. Ltd 56,122	Bulmer's (Calculators) Ltd. 88 Carter-Parratt Ltd 108 Constructors Group 12 Copeland-Chatterson Co. 33 Evertaut Ltd 127	Rubery Owen & Co. Ltd 42 Sankey-Sheldon Ltd 53 Vickers-Armstrongs (Engineers) Ltd 57	Baxter, Fell & Co. Ltd 5 Constructors Ltd 1 Conseland-Chatterson Co. 3
ADDING HACHINES Adwel Adding Machines	Rank Precision Industries Ltd 30	Expandex Visible Filing Co. Ltd	OFFICE FURNITURE (WOOD) Catesbys Ltd	Evertaut Ltd. 12 Gascoigne, Geo., Co. Ltd. 4 Harvey, G. A., Ltd. 3 Odoni, Alfred A., & Co. 12 Rubery Owen Ltd. 4 Sankey-Sheldon Ltd. 5
Ltd 23 Block & Anderson Ltd. 36,55 British Olivetti Ltd 48, 49 Bulmer's (Calculators) Ltd. 88 Burroughs Adding Mch 20	CLOAKROOM EQUIPMENT Constructors Ltd 12 Harvey, G. A., & Co 35	Kalamazoo Ltd	Catesbys Ltd 18, 63 Globe-Wernicke Ltd 101 Gold Seal Furniture 61 Mason, E. N., & Sons 120 Shannon Ltd 123	Sankey-Sheldon Ltd 5 Westwood, Jos., & Co. Ltd. 10 STOP WATCHES
Comptometer Ltd. (Great Britain) 27 National Cash Register 97, 107 Sumlock Ltd. 93	Rubery Owen & Co. Ltd 42 Westwood, Joseph, & Co. Ltd	Remington-Rand Ltd. 37, 84 Sankey-Sheldon Ltd 53 Shannon Ltd 123	OFFICE REQUISITES	TELEPHONE AMPLIFIER
ADDRESSING MACHINES	COIN COUNTING MACHINES International Coil Count-	FINANCE Industrial & Commercial Finance Corp. Ltd 45	Ofrex Ltd 125 OVERALLS Wheeler, H., & Co. Ltd 132	ANDJACCESSORIES Fonadek (Branson) Ltd 7 Magowan & Co. Ltd 17
Addressall Machine Co 47 Block & Anderson Ltd. 36, 55 Roneo Ltd	ing Machine Co. Ltd 123	FIRE ALARM SYSTEMS Gent & Co. Ltd 2 Siemens Edison Swan Ltd. 50	PACKING Gordon & Gotch Ltd 38 Reed Corrugated Cases Ltd 54 Universal Pulp Containers	SOUND EQUIPMENT Dictograph Telephones Ltd. 6 Gent & Co. Ltd
ADDRESSING MACHINE ATTACHMENT Fanfold Ltd 104 Lamson Paragon Ltd 95	Polytechnic, The 128 Tack School of Salesman- ship 14	FIRE EXTINGUISHERS Nu-Swift Ltd 4	Ltd cover iv	Siemens Edison Swan Ltd
Lamson Paragon Ltd 95 Smith, W. H., & Son (Alacra) Ltd —		FLOORING Gt. Met. Flooring Co 126	PARTITIONING Art Metal Construction 99 Clifford Partitioning Co. Ltd	TEMPERATURE
ADVERTISING GIFTS Sculchorp, R., & Co. Ltd 62	Ltd cover ii	FOLDING MACHINES	Ltd 117 Constructors Ltd 12 Sankey-Sheldon Ltd 53	Smith's English Clocks 1 TICKET PRINTING MACHINES
ASSURANCE Legal & General Assurance	CATTIONERY Carter-Davis Ltd 109 Catlin, A. J., Ltd 116	Block & Anderson Ltd. 36, 55 HEALTH SERVICES Freeder Brothers 117	PENS AND PENCILS Eagle Pencil Co 102, 103 Epic Ball Pens 119 Esterbrook Hazell Pens	IBM United Kingdom Ltd. (International Time Recording Division) 8
Society 32	Copeland-Chatterson Co. 33 Egry Ltd	Saniguard Appliances — INDUSTRIAL CLEANING	Venus Pencil Co 60	TIME RECORDERS Blick Time Recorders Dictograph Telephones 6
BOOKS AND PUBLICATIONS Pitman, Sir Isaac, & Sons Ltd	Petty & Sons Ltd 58 Smith, W. H., & Son		CONSULTANTS The Noble Lowndes Pension Service 9	Gent & Co. Ltd. IBM United Kingdom Ltd. (International Time
BROADCAST MUSIC	(Alacra) Ltd —	Vulcan Boiler & General Insurance Co. Ltd 101	PHOTOGRAPHIC REPRODUCING	Servis Recorders Ltd.
Dictograph Telephones 64	CYCLE PARKS Constructors Ltd 12 Odoni, Alfred A., & Co 128	MACHINES Block & Anderson Ltd. 36, 55	Block & Anderson Ltd. 36,55 Ilford Ltd	ACCESSORIES British Olivetti Ltd 48.4 Office Equipment Distributors (B.T.L.) Ltd 113.1
BUSINESS ACCESSORIES Coombs, H. A., Ltd 103	DICTATING AND RECORDING EQUIPMENT	International Coin Count- ing Machine Co. Ltd 123 LOOSE LEAF LEDGERS	Rank-Xerox Ltd	Oliver Typewriter Mfg. Co. Ltd Olympia Business Machines Ltd Remington Rand Ltd. 37.
CALCULATING MACHINES Block & Anderson Ltd. 36,55	E.M.I. Sales & Services Ltd. 24 Grundig (Gt. Britain) Ltd. 10 Remington-Rand Ltd. 37,84	AND SYSTEMS Art Metal Construction 99 Copeland-Chatterson Co. 33 Jones, Percy (Twinlock) 131	SYSTEMS Lamson Engineering Co. Ltd 115	Taylors Typewriter Co. Led 1
British Olivetti Ltd 48, 49 Bulmer's (Calculators) Ltd. 86 Burroughs Adding Mch 20 Comptometer Ltd. (Great	DUPLICATING MACHINES Block & Ancerson Ltd. 36, 55	Kalamazoo Ltd	PRINTERS AND STATIONERS Liberty Printers Ltd 129	EQUIPMENT Colt Ventilation Ltd. 52 WATCHMEN'S CLOCKS
Britain) 27 Office Equipment Distrib- utors (B.T.L.) Ltd. 113,118 Remington-Rand Ltd. 37. X	Bulmer's (Calculators) Ltd. 88 Office Equipment Distribu- tors (B.T.L.) Ltd 113, 118 Remington-Rand Ltd. 37, 84	MARKING EQUIPMENT	PRINTING MACHINES	Blick Time Recorders 13.1 Gent & Co. Ltd. IBM United Kingdom Ltd.
Sumlock Ltd 93	Rotaprint Ltd 90	Cushman & Denison Ltd. 110	Rotaprint Ltd 90	Recording Division)



Collated to suit any requirement

Multi-part stationery sets are being used more and more in the modern office of to-day. The quick and simple separation of carbons from copies saves much time and aids office efficiency. It is clean and comparatively low in price.

Ideal for use in Order, Despatch, Accounts Departments etc.

Ask your Stationer or Printer for a sample Twinlock "Snap Apart" Stationery Set and see how valuable an asset it would be in your office.



from stub.



33

60 90

29

44

24

29 S

6

33

19

PERCY JONES (Twinlock) LTD. 37 CHANCERY LANE, LONDON W.C.2 SHOWROMS: GLASGOW, MARCHESTER & BIRMINGHAM HEAD OFFICE & FACTORIES: BECREHMAM, RENT

SEPTEMBER, 1958

BUSINESS

ADVERTISERS IN THIS ISSUE

For Classified Guide to Business and Industrial Equipment see page 130

Addressall Machine Co 47 Adwel Adding Machines Ltd. 23 Art Metal Construction Co. 99 Bartlett, G. F. E., Ltd 46 Baxter, Fell & Co. Ltd 58 Blick Time Recorders Ltd. 13, 124 Block & Anderson Ltd. 36, 53 British Olivetti Ltd. 48, 49 British Stationery Council	Gascoigne Co. Ltd., The	Odoni, Alfred A., & Co. Ltd. 128 Office Equipment Distribu- tors (8.T.L.) Ltd. 113, 118 Office Equipment Renovating Co. Ltd. 126 Ofrex Group of Companies 125 Oliver Typewriter Mig. Co. Ltd. 19 Olympia Business Machines Ltd. 114
Sulmer's (Calculators) Ltd. —88 Burgess Products Co. Ltd. —15 Burlington Publishing Co. —129 Burroughs Adding Machine Ltd. —20	Halsby & Co. Ltd 56, 122 Harvey, G. A., (London) Ltd. 35 Hunt & Colleys Ltd 62	Petty & Sons Ltd
Calculating Services (Birmingham) Ltd	IBM United Kingdom Ltd. (International Time Recording Division) 83 Ilford Ltd 40 Industrial & Commercial Finance Corporation Ltd 45 International Coin Counting Machine Co. Ltd 123 Jetleys (Gt. Britain) Ltd 51 Jones, Percy, (Twinlock) Ltd. 131	Rank Precision Industries Ltd
Columbia Ribbon & Carbon Mfg. Co. Ltd	Kalamazoo Ltd 31 Kodak Ltd 59	Scutchorp, M. & Co. Ltd &2 Servis Recorders Ltd 110 Shannon Ltd 123 Siemens Edison Swan Ltd 50 Smith's English Clocks Ltd. 16 Sumlock Ltd 93
Cushman & Denison Ltd 110 Dare Inglis Products Ltd 29 Dickinson, John, & Co. Ltd. 32 Dictograph Telephones Ltd. &4 Durham, H. H., Ltd 129	Lamson Engineering Co. Ltd. 115 Lamson Paragon Ltd 95 Leabank Office Equipment Ltd 44 Legal & General Assurance Society 32 Liberty Printers Ltd 129	Tack School of Salesmanship 14 Taylor's Typewriter Co. Ltd. 128 Telegraph Condenser Co. Ltd cover if Trade Loose Leaf Co. Ltd 129 Universal Pulp Containers
### M. Ltd. (Sales & Services) 24 Fagle Pencil Co	Magowan & Co. Ltd 129 Mason, E. N., & Sons Ltd 120 National Cash Register Co.	Venus Pencil Co. Ltd 60 Vickers-Armstrongs (Enginers) Ltd 57 Vulcan Boiler & General Insurance Co. Ltd 101
Fanfold Ltd	Ltd. 97, 107 National Loose Leaf Co. Ltd. 126 New Welbeck Ltd. 115 Noble Lowndes & Partners Ltd. 9 Nu-Swift Ltd. 4	Wesley, Harold, & Co. Ltd. 102 Westwood, Joseph, & Co. Ltd

OFFICE ADMINISTRATION

Edited for the Office Management Association by Geoffrey Mills and Oliver Standingford. 25s. net.

A symposium of articles on all aspects of the organization and methods of business, professional and commercial offices. The contributors, some of whom are members of the O.M.A., are all specialists in their own fields.

MANAGEMENT, LABOUR AND COMMUNITY

Edited by D. Cleghorn Thomson, M.A., F.R.S.E. 35s. net.

Twenty-two of the nation's experts in management and human relations have contributed to a symposium of the most dynamic kind. The first part of the book deals with what is involved in the concept of management, and the second with practical methods of training.

GUIDE TO COMPANY LAW

By R. W. Holland, O.B.E., M.A. 10s. Revised and brought up-to-date, this work provides an admirable explanation of the elementary principles of Company Law. It simplifies the complications without ever omitting the essential detail.

PITMAN

Parker Street, London, W.C.2



RIGMEL SHRUNK

* BOILER SUITS

★ BIB & BRACE OVERALLS

* APRONS, etc., for MEN & WOMEN

* COATS, JACKETS

H. WHEELER & COMPANY LTD.

107 London Road, Plaistow, London, E.13 Phone: GRAngewood 4071 (5 lines)

Printed for the Proprietors, BUSINESS PUBLICATIONS Ltd., registered office: 180 Fleet Street, London, E.C.A., England. (Waterloo 3388 by The North Western Printers Ltd., Heaton Lane, Stockport.

Advertisement, editorial and sales offices: Mercury House, 109-119 Waterloo Road, London, S.E.I. (Waterloo 3388).





THE SYMBOL OF FINEST QUALITY PAPERS

NE RAG PAPERS

Fine papers make fine letter headings. Good print
on poor paper has no more merit than good
tailoring on poor cloth. The British Stationery
Council has sponsored the publication of a unique
book entitled "Behind the Symbol" showing
many combinations of print by different processes
on some of Britain's finest Rag Papers. Your
printer has a copy—ask to see it before re-ordering
your stationery.



Ask your printer to show you this book when selecting your office stationery

ISSUED BY THE BRITISH STATIONERY COUNCIL. BALFOUR HOUSE 1 119 FINSBURY PAVEMENT 1 LONDON, E.C.2

Container by



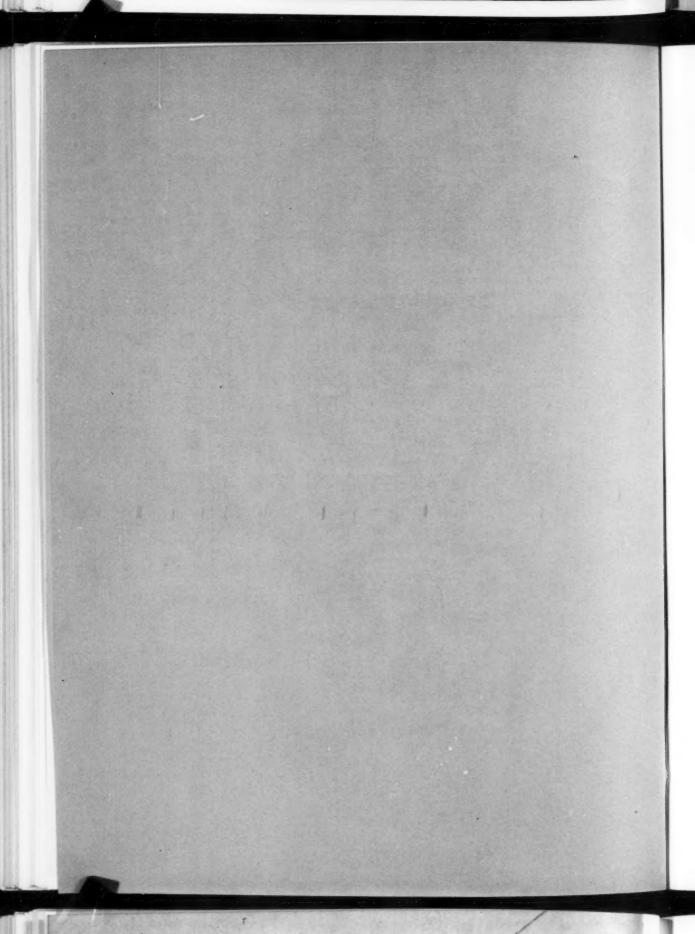
UNIVERSAL PULP CONTAINERS LTD.

BUSINESS

Comprehensive Guide to

OFFICE MACHINES and SYSTEMS

PUBLISHED ON THE OCCASION OF THE BUSINESS EFFICIENCY EXHIBITION CITY HALL, MANCHESTER SEPTEMBER 22-27, 1958



Office Machines and Systems

A Special Issue of

BUSINESS

Journal of Management

MID-SEPTEMBER 1958

Published on the occasion of the Business Efficiency Exhibition City Hall, Manchester, September 22 - 27, 1958

> The Industry that No Business Can Do Without 3 Exclusive article by Major C. V. Wattenbach, M.B.E., M.C., F.S.M.A., President of the Office Appliance and Business Equipment Trades' Association

Where to Look for Money-saving Ideas 6 Plan of exhibitors' stands and full list of names and addresses

What to See - a Classified Preview

For the businessman who wants to make the most of his B.E.E. visit-and the businessman who cannot get there-new and established products on show are described in 14 'function' groups:

About the Exhibition

With some 107 exhibitors, the 45th Business Efficiency Exhibition will be the largest ever held outside London. On each of the five days it will be open to the public from 10 a.m. to 8 p.m. The charge for admission is 2s. 6d., and there reduced rates for school children and organized parties on certain days.

The official opening ceremony will be performed by Alderman J. E. Fitzsimons, Lord Mayor of Manchester, at 11.30 a.m. on Monday, September 22.

ACCOUNTING, ANALYSIS AND BOOK-KEEPING 13

ADDING AND CALCULATING 19

ADDRESSING AND MAILING 27

CASH-HANDLING EQUIPMENT 33

CONTINUOUS STATIONERY 37

CONTROL AND PLANNING 43

DICTATING AND RECORDING 47

ELECTRONIC DATA PROCESSING 51

FILING AND RECORDS 55

FURNITURE, SEATING, SAFES, STORAGE AND SUNDRIES 65

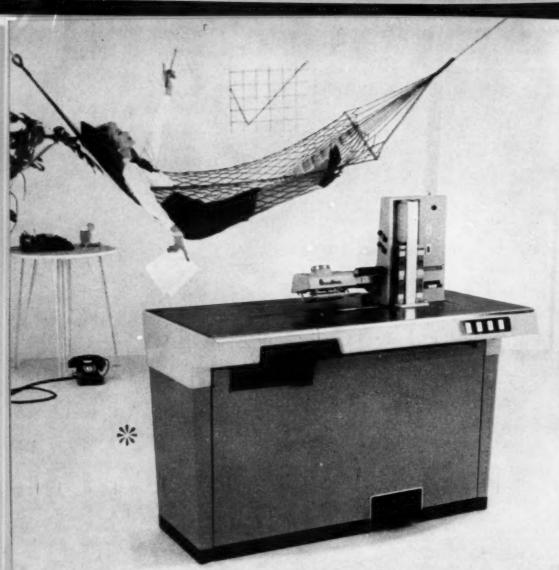
INTERCOMMUNICATION 77

PUNCHED CARD EQUIPMENT 81

REPRODUCTION EQUIPMENT 85

Typewriters 95

Index to Advertisers 100



Our office almost takes care of itself

. since we invested in Bradma.

The Bradma System of automatic printing—based on the onepiece metal plate—offers a range of machines to suit every type and scale of application. Bradma solves the problem of repetitive routine paperwork, in office and factory. Bradma is fast, accurate and economical; easy to operate; and so flerible that it fits into any existing office method. For further details of how Bradma can streamline your office work, contact Adrema Ltd., Telford Way, London, W.3. SHEpherds Bush 2091.

Bradma

means business



The versatile BUCKINGHAM, Bradma's power-operated heavy-duty model, designed for high-output systems printing and listing work.

BUSINESS SYSTEMS EQUIPMENT

by Major C. V. Wattenbach, M.B.E., M.C., F.S.M.A., President of the Office Appliance and Business Equipment Trades' Association



ANCHESTER is the hubthe commercial centre if you prefer—of one of the most vigorously pulsating industrial areas of the country, and not unnaturally, 35 years ago, my Association made it the centre for the first Business Efficiency Exhibition we held outside London. Within 25 miles you have a population of 41 million, with industries ranging from textiles to insurance, engineering to chemicals, and the manufacture of clothing to the packaging of all manner of goods, great and small.

DIRECT MAIL.

BATING

Many of these industries are so powerful that they must be among the first to accept office automation on the grand scale. To them the B.E.E., we hope, will prove not only a valuable introduction to the latest developments in the electronic field but also stimulating 'aperitif' before the first Electronic Computer Exhibition which my Association is organizing with the Electronic Engineering Association in London next November.

On the other hand, we in this industry never forget that 90 per cent of the business undertakings of Great Britain employ fewer than 250 people and, while not ripe for the latest advances in electronics, are continuously seeking fresh and more efficient ways of dealing with their to ignore this side of its activities, and therefore we believe that in taking our 45th B.E.E. to the capital city of the North-West, we are setting up a show-window of the latest office machinery in one of the places where it is most needed.

But as this show-window can be open only for a week, it is vital that it should receive the utmost publicity in the right places at the right time. In seeking to attain this objective this special issue of Business, providing a full, classified survey, must be welcomed as an 'ambassador-atlarge'. It goes, of course, a great deal further afield than the industrial areas of Lancashire, but then this is a national exhibition and our industry Manchester, the Exhibition's doors are open to all, from far and wide, just the same as in London. Indeed we hope we shall see again as many as possible of the visitors from 67 countries who came to our show at Olympia in June last year.

Our aim has been as always to bring possible of all the greatest laboursaving and most up-to-date machhandling every clerical routine task: Linden and Vienna's Ringstrasse.

expanding volume of clerical work, and the number of developments None either can afford to or desires never shown before, will be, as this survey reveals, remarkable.

> Some 107 firms are taking part, more than at any other exhibition we have held outside London. Not least impressive to visitors, we believe, will be the amount of equipment for enabling country to converse with country and nation with nation, regardless of language problems. By this I do not mean literal interpreters but such equipment as printing and duplicating machinery which can reproduce pictorial matter rapidly and impressively, calculating machinery which can operate in both the sterling and decimal systems, typewriters with 'interchangeable' keyboards, and so on.

These are today not merely exis exporting to three-quarters of the hibits of purely academic interest to world. While centred this year in all save our overseas visitors. With the introduction of a Common Market and maybe a European Free Trade Area, many of them will become absolutely vital to a very large section of British industry, for more business can be clinched today by clerical efficiency than ever before.

No longer, in fact, is our shop together as wide a cross-section as window only in the local high street. It is also in Mexico City's Paseo de Reforma and Brussels' Boulevard ines, systems and equipment for Adolphe Max, on the Unter den



Quick, simple, foolproof

That's the Primus Register for you—the most straightforward and reliable register available. For quick handwritten records like works orders, delivery notes, goods inwards, stores requisitions and sales chits it is invaluable.

- * Built to last. We know of several Primus Registers that have been in use over 30 years.
- * Simple mechanism. Repairs are rare.
- Quick and easy loading. Anyone can do it after being shown once.
- Automatic carboning. Copies are always clear and distinct.
- * Up to 5 carbon copies with all models.
- Up to 300 sets of forms in triplicate from one loading. Up to 300 sets in sextuplicate.
- * One copy automatically locked away in

sealed compartment as an infallible check on all transactions.

- * Made in 3 sizes to take forms 6in. x 4in., 8\(\frac{1}{2}\)in. x 5\(\frac{1}{2}\)in. and 8\(\frac{1}{2}\)in. x 8\(\frac{1}{2}\)in.
- Primus Continuous Stationery for use in the Register designed for your particular needs.

 Also available fitted with strong metal lined wooden cash till.



Portable Model. A smaller version of the Standard Model. Easily carried. Identical performance except for locked copy.



Please write for leaflet giving full details.



The Primus Register has been chosen for display by the Council of Industrial Design and may be seen at the Design Centres in both London and Glasgow. A PRODUCT OF

CARTER-DAVISITD.

QUEEN ELIZABETH STREET, LONDON, S.E.1 Telephone HOP 5344 (5 lines)

BRANCHES: BELFAST, BIRMINGHAM, BRISTOL, DUBLIN, EDINBURGH, GLASGOW, LEEDS, LEICESTER, LIVERPOOL, MANCHESTER, NEWCASTLE-

Get down to the brass tacks of COMPUTERS

Ordering a computer is relatively easy. Choosing the right one, understanding its use, harnessing it to specific problems, is quite another matter. It is a long process. It needs much probing into the fundamental organisation of your business. Only people who are both computer men and business experts can help you. These are at your service at the Hollerith Computer Centre.

At 36 Hertford Street the Hollerith Computer Centre provides a convenient forum, round a working computer, for the exchange of ideas and results. There are several ways of making use of the Centre. Here are two examples:

Higher Management Courses — which provide a concise appreciation of computers in business, with maximum emphasis on case studies of computer usage. These courses last 4 days.

Study Teams from individual organisations come to discuss their own specific problems with our computer experts—production control, for example. These courses last from I to 5 days.

If you want to see how a computer could solve your particular problem, come and make use of us, come and pick our brains.

at the

HOLLER CENTRE

36 HERTFORD STREET, LONDON, W.1 GRO 1765

* Enquiries about the Hollerith Computer Centre can be addressed to any of the district or local offices of The British Tabulating Machine Company Ltd., or to Head Office: 17 Park Lane, W.1

BUSINESS EFFICIENCY

CITY HALL, MANCHESTER

EXHIBITORS

ABBOTT BROS (SOUTHALL) LTD.—Stand 52. "Abbess" Works, Southall, Middx.

ACRAL LTD.—Stand 94. Alexandra Road. Enfield, Middx.

ADAPTA-CHARTS LTD.—Stand 104. 129 Hammersmith Road, W.14.

ADDRESSALL MACHINE CO.—Stand 53. 11/13 Southampton Row, W.C.1.

ADDRESSING MACHINES HAYWARD LTD.—Stand 21. 62 Britton Street, E.C.1.

ADDRESSOGRAPH-MULTIGRAPH LTD.— Stand 16. Maylands Avenue, Hemel Hempstead, Herts.

ADREMA LTD.—Stand 7. 2/10 Telford Way W.3.

AGA DICTATING MACHINE CO.—Stand 36. St. Stephen's House, Westminster, S.W.1.

AMBIDEX EQUIPMENT LTD.—Stand 71, 25/29 Coleman Street, E.C.2.

GEORGE ANSON & CO. LTD.—Stand 43. 75 Southwark Street, S.E.1.

ARCHIMEDES-DIEHL-MACHINE CO.LTD.
—Stand 55. Chandos House, Buckingham Gate, S.W.1.

ART METAL CONSTRUCTION CO.—Stand 17, 89. 199/203 Buckingham Gate, S.W.1.
ASSMANN DICTATING SYSTEMS LTD.—Stand 92. 27 Craven Street, W.C.2.

BLOCK & ANDERSON LTD.—Stand 80. Cambridge Grove, Hammersmith, W.6.

B.O.S.C.O. LTD.—Stand 106. 3a Wood Street, E.C.2. BRITISH OLIVETTI LTD.—Stand 65. 30 Berkley Square, W.1.

BRITISH TABULATING MACHINE CO. LTD.—Stand 78. 142 Park Lane, W.1.

BROUGHTON & CO. (BRISTOL) LTD.— Stand 68. 6 Priory Road, Tyndalls Park, Bristol 8. BULMER'S (CALCULATORS) LTD.—Stand 14. Empire House, St. Martins-le-Grand, E.C.;

BURROUGHS ADDING MACHINE LTD.
—Stand 47. 356/366 Oxford Street, W.1.

BUSINESS PUBLICATIONS LTD.—Stand 109. 109/119 Waterloo Road, S.E.1.

CARSON BROS (PRODUCTIONS) LTD.— Stand 57. 3/4 Charlotte Road, E.C.2.

CARTER-DAVIS LTD.—Stand 41. 20 Queen Elizabeth Street, S.E.1.

CARTER-PARRATT LTD.—Scand 3. Iddesleigh House, Caxton Street, S.W.1.

CHATWOOD-MILNER LTD.—Stand 12. 58 Holborn Viaduct, E.C.1.

CHUBB & SON'S LOCK AND SAFE CO. LTD.—Stand 58. 175/176 Tottenham Court Road, W.1.

COMMUNICATION SYSTEMS LTD.—Stand 95. Norfolk House, Norfolk Street, W.C.2.

COMPTOMETER LTD. (GB)—Stand 63. Aldwych House, Aldwych, W.C.2.

CO-OPERATIVE WHOLESALE SOCIETY LTD.—Stand 108. National Works, Hall Street, Dudley, Worcs.

COPYCAT LTD.—Stand 62. 40 Victoria Street. S.W.1.

DACRON (PLAN-O-MATIC) LTD.—Stand 32. 32 Fitzroy Square, W.1.

DAPAG (1943) LTD.—Stand 27. 7/8 Old Bailey, E.C.4.

DARE-INGLIS PRODUCTS LTD.—Stand 60-Byron Road, Harrow, Middx.

A. B. DICK CO. OF GREAT BRITAIN LTD.
—Stand 90. Sentinal House, 140 Theobalds Road,
W.C.1.

DICTAPHONE CO. LTD.—Stand 11. 17/19 Stratford Place, W.1.

DICTOGRAPH TELEPHONES LTD.—Stand 48. Abbey House, Victoria Street, S.W.1.

THOMAS A. EDISON LTD.—Stand 42 Victoria House, Vernon Place, W.C.1.

EGRY LTD.—Stand 66. St. George's House, 15 Hanover Square, W.1.

ELLAMS DUPLICATOR CO. LTD.—Stand 99. 5 Dean Street, W.1.

E.M.I. SALES & SEFVICE LTD.—Stand 5.

EVERTAUT LTD.—Stand 102. Walsall Road, Perry Bar, Birmingham, 228.

EVERTAUT SEATING LTD.—Stand 105. Cross Street, Darwen, Lancs.

EXPANDEX VISIBLE FILING CO. LTD.— Stand 22. Surpass House, 26 Harrison Street, W.C.1.

FANFOLD LTD.—Stand 84. Bridport Road, Edmonton, N.18.

FORDIGRAPH LTD.—Stands 100 and 101. Ofrex House, Stephen Street, W.1.

GESTETNER LTD.—Stands 18 and 96. 210 Euston Road, N.W.1.

GLEDHILL-BROOK TIME RECORDERS LTD.—Stand 98. Empire Works, Huddersfield. G. H. GLEDHILL & SONS LTD.—Stand 98. 26 Victoria Street, S.W.1.

J. GLOVER & SONS LTD.—Stand 67. Groton Road, Earlsfield, S.W.18.

HALSBY & CO. LTD.—Stand 86. 52/53 Dean Street, W.1.

HARTLEY ELECTROMOTIVES LTD.—Stand 69. Camp Bird House, Dover Street, W.1.

G. A. HARVEY & CO. (LONDON) LTD.— Stand 49. Greenwich Metal Works, S.E.7.

IBM UNITED KINGDOM LTD.—Stand 77. International Works, Beavor Lane, W.6.

1MPERIAL TYPEWRITER CO. LTD.—Stand 2. East Park Road, Leicester.

INTERNATIONAL COIN COUNTING MACHINE CO. LTD.—Stand 94. Alexandra Road, Enfield, Middx.

JENKINS FIDGEON LTD. — Stand 35. Meadows Road, Kidsgrove, Stoke-on-Trent.

PERCY JONES (TWINLOCK) LTD.—Stand 79. 37 Chancery Lane, W.C.2.

KALAMAZOO LTD.—Stand 8. Northfield, Birmingham 31.

KINGSBURY OFFICE EQUIPMENT LTD.—Stand 9. Oxford Avenue, Trading Estate, Slough.

KODAK LTD. (RECORDAK DIVISION)— Stand 75. 1/4 Beech Street, E.C.1.

LAMSON PARAGON LTD.—Stand 46. Paragon Works, E.16.

LEABANK OFFICE EQUIPMENT LTD.— Stand 82. Clifton House, Euston Road, N.W.1.

LOGABAX LTD.—Stand 26. 21 Buckingham Palace Road, S.W.1.

Stand 76. Terminal House, Grosvenor Gardens,

MANIFOLDIA LTD.—Stand 24. West Brom-

D. MATTHEWS & SON LTD.—Stand 25. 61/63 Dale Street, Liverpool 2.

MINNESOTA MINING & MANUFACTUR-ING CO. LTD.—Stand 38. 3M, House, Wigmore Street, W.1.

MODERN TELEPHONES (GB) LTD.— Stand 107. 101 Tottenham Court Road, W.1.

MONROE CALCULATING MACHINE CO. LTD.—Stand 31. Bush House, Aldwych, W.C.2.

EXHIBITION

SEPTEMBER 22-27, 1958

45 MOORE'S MODERN METHODS LTD.— Stand 74. 19/21 Farringdon Street, E.C.4. 51 53 32 33 34 35 36 17 38

MULDIVO CALCULATING MACHINE CO. LTD.—Stand 34. Dorset House, Salisbury Square, E.C.4.

NATIONAL CASH REGISTER CO. LTD.— Stand 83. 206/216 Marylebone Road, N.W.1.

OFFICE EQUIPMENT DISTRIBUTORS (B.T.L.) LTD,—Stand 61. Birmingham Road, West Bromwich.

OFFICE MACHINERY LTD.—Stand 28. Omal House, 169 Tottenham Court Road, W.1. OFFICE MAGAZINE—Stand 88a. 319 High Holborn, W.C.1.

OFREX LTD.—Stand 20. Ofrex House, Stephen Street, W.1.

OLIVER TYPEWRITER MFG. CO. LTD.— Stand 64. Ingersoll House, Kingsway, W.C.2.

OLYMPIA BUSINESS MACHINES LTD.— Stand 40. 35 Red Lion Square, W.C.1.

OWEN & RANDALL (STOR CABINETS) LTD.—Stand 87. Furse Platt, Maidenhead, Berks. OZALID CO. LTD.-Stand 81. 62 London

PETTY & SONS LTD.—Stand 44. Whitehall Printeries, Leeds 12.

PHOTOSTAT LTD.-Stand 75. 1/4 Beech

POWERS-SAMAS ACCOUNTING MA-CHINES (SALES) LTD.—Stand 1. Powers-Samas House, Holborn Bars, E.C.1.

POWERS-SAMAS ACCOUNTING MA-CHINES LTD.—Stand 91. Powers-Samas House, Holborn Bars, E.C.1.

PUNCHED CARD ACCESSORIES LTD.-Stand 93. Abbey House, Victoria Street, S.W.1.

RANK XEROX LTD.—Stand 4. 37/41 Mortimer Street, W.1.

RELIANCE TELEPHONE CO. LTD.—Stand 73. 43/47 Parker Street, W.C.2.

REMINGTON RAND LTD.—Stands 6, 103. 1/19 New Oxford Street, W.C.1.

RONEO LTD.—Stand 45. Hornchurch Road, Romford, Essex.

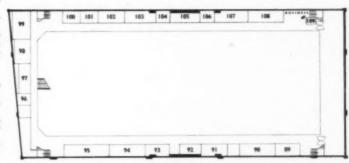
RONEO-NEOPOST LTD.—Stand 59. Lion House, Red Lion Street, Richmond, Surrey. ROTAPRINT LTD.—Stand 15. Rotaprint House, Honeypot Lane, N. W.9.

ROYAL McBEE.—Stand 51. 36 Worship Street, E.C.2.

RUF ORGANISATION LTD.—Stand 88. 6 Central Buildings, Horley, Surrey.

MID-SEPTEMBER, 1958

81 77 76 73 74 67 70 71 72 73 63 62 61 60 55 57 99 44 46 45 41 40 23 22 21 30 19 28 27 24 24 29 18 15 17 11 9 18 12 14 5 4 2



SANKEY-SHELDON LTD.—Stand 85. 46 Cannon Street, E.C.4.

SIEMENS EDISON SWAN LTD.—Stand 33. Avonmore Trading Estate, Avonmore Road, W.14.

STANDARD OFFICE SUPPLIES CO.—Stand 23. 57 Farringdon Road, E.C.1.

STOLZENBERG PATENT FILE CO. LTD.
—Stand 72. 14 Queen Victoria Street, E.C.4.

TAN-SAD CHAIR CO. (1931) LTD.—Stand 19. 296/301 High Holborn, W.C.1.

TELEPHONE RENTALS LTD.—Stand 56. 197 Knightsbridge, S.W.7.

THE SHANNON LTD,—Stand 50. Shannon Corner, New Malden, Surrey.

T.S. (OFFICE EQUIPMENT) LTD.—Stand 37. 140/148 Borough High Street, S.E.1.

UNDERWOOD BUSINESS MACHINES LTD.—Stand 54. 4/12 New Oxford Street, W.C.1. UNIFOLD MAILING MACHINES LTD.— Stand 70. 20 Paxton Place, S.E.27.

UNIVERSAL POSTAL FRANKERS LTD.— Stands 10, 29. Frankopost Works, Angel Road, N.18.

WADDIE & CO. LTD.—Stand 30. 97 Slateford Road, Edinburgh 11.

FRANK WILSON & CO.—Stand 97. 55 Fore Street, E.C.2.



See the proved* Residency demonstrated on STAND J 56

Here you will find the latest developments in INTERNAL TELEPHONES · INTERNAL BROADCASTING
STAFF LOCATION · TIME CONTROL (Synchronised Clocks, Attendance and Job Time Recorders)
CENTRALOGRAPH Machine Control · WATCHMAN PROTECTION · FIRE ALARMS

* Proved over more than 50 years



Manchester Branch: 15 Aytoun Street, Manchester Telephone: Central 1112

HEAD OFFICE: 197 KNIGHTSBRIDGE, LONDON, S.W.7 TELEPHONE: KENSINGTON 1



indivi dual ity!

Very few people have average figures, the human frame and shape differs in every individual. Theoretically, therefore, for true posture and the comfort that is essential for efficiency, the answer would seem to be a chair constructed in accordance with the anatomical dimensions of the user. The alternative . . . ?

A chair that is truly adjustable!

Here at last . . .

is an armchair that has everything. The double curved lumbar region supporting backrest is adjustable for height and angle and is spring loaded with tension control. The fully sprung seat can be raised or lowered with a new adjustment which allows free swivel movement yet stays at the desired seat height. All these features, and more, plus the wide range of Du-al upholstery materials and finishes ensure that here at last is a chair designed for individuality.

Du-al model J.28 Executive Swivel Posture Chair

SEE US ON STAND 60 Business Efficiency Exhibition MANCHESTER



Du-al have the answer to all your seating problems



tubular steel furniture

DARE-INGLIS PRODUCTS LIMITED Du-al House, Byron Road, Harrow, Middlesex

Telephone HARrow 5141 (5 lines)

Telegrams DU-AL, HARROW



We are t



THE TYPING POOL



THE MONITORING TABLE

for last-word efficiency

Authenticated by Montague Burson Ltd.

We are the economists; we girls, that's to say, who work in the typing pool at Montague Burton's factory in Leeds-Gwen Smith, Vera Bligh, Mary Arthurton,
Pat Law, Valerie Melnyck and the rest of us. This is a big, important factory, but there are only twenty-two of us, including a supervisor, and we do just about all the typing. There used to be forty girls here; but that was before they installed Tape-Riter.
They didn't sack anybody. Girls just gradually left to get married, and didn't need to be replaced. We all love working with Tape-Riter. It's very easy to operate; and we get through a lot more work each day—without any interruptions, too. And the manager tells us that Tape-Riter saves the firm nearly as much in a year as the whole cost of installing it.

re the economists.

Montague Burton Ltd., is one of the many important concerns which have installed the Tape-Riter system. They have two banks of three machines each, with two monitoring machines. Tape-Riter is the perfect dictating and transcribing system for any firm, whatever its size. You just dictate your letters and memos straight on to the tape—and at your own speed, correcting your errors, if any, as you go.

The typist simply plays back the recording to herself, and types as she listens—at her own speed. No time wasting, so lost energy, no fumbling with shorthand notes; instead neatness, accuracy, efficiency, economy:—Tape-Riter.



Jape Riter

WILL ELECTROMOTIVES 1.11

- TAPISATTER DIVINOR

CAMP MIND HOUSE

M. DOWER STREET

ECHENN, W. F. - RVIN PA

MANCHESTER

· Fat Abback



Going to the B.E.E.?

There's so much that's new on the *National* stand that it's worth a special visit

All-purpose Accounting Machines that also multiply in sterling!

Small Office Book-keeping Machines of astonishing versatility

Electronic Posting and Analysis Machines

Super-speed Line Kaybond - Adding Machines

Automatic, item totalling Cash Registers

NCR-(No Carbon Required)-multiple copy paper etc. etc.

Stand No.



Business Efficiency Exhibition

The National Cash Register Company Ltd · 89 Oxford Street · Manchester 1 · Telephone: Central 7058

ACCOUNTING MACHINES . BOOK-KEEPING MACHINES . HANDWRITTEN SYSTEMS • FRONT-FEED TYPEWRITERS • TYPEWRITER-ADDING MACHINE LINKS . MANUAL PUNCHED CARD SYSTEMS

Accounting Analysis Book-keeping

These are new

Summary analysis board (Anson) . . . Addo book-keeping machine (Bulmer's) . . . Sterling model Sensistronic (Burroughs) . . . S.210 model (Logabax) Typewriter-adding machine link (Manifoldia) . . . Accounting Multiplier (National Cash) . . . Front-feed typewriter (RUF) . . . Post-master 92 book-keeping machine (Underwood)

Bulmer's (Calculators) Ltd. • STAND No. 14

The small, electric accounting machines in the Addo-X series are suitable for a wide range of operations. Reasonably priced and simple to tion to a full figure keyboard, an 84operate, they are all basically elaborations on the 12-key adding machine, fitted with longer carriages and other refinements

The Class X 5000 has a front-feed. automatic non-add and non-print; and is controlled by an interchangeable programme bar set up for four different routines. The machine also has a standard tally roll and can be used for ordinary adding-listing.

Next in size is the 6000 which has, as an additional feature, automatic carriage return, entire or limited automatic carriage opening, plus and minus repeat, date, and register clearance

Largest in the series is the tworegister 7000. The Aut-o-Feed version of this machine has a device which places accounting cards automatically into the correct writing

(Other accounting machines on this stand are described in the Electronic Data Processing section on page 51.)

Burroughs Adding Machine Ltd. STAND No. 47

Four versions of the Sensimatic accounting machine will cope with every accounting operation. Work is automated to such a degree that uncorrected errors cannot occur, and the operator merely feeds in basic uses cards backed with magnetic

trolled by interchangeable programme bars.

The typing Sensimatic has, in addicharacter typewriter keyboard which



Burroughs' Sensimatic

operates a box printer unit. Its long front-feed carriage accommodates several cards side by side, and it has 19 accumulating 'memory' units. Another model, designed chiefly but not exclusively for payroll, has a 'crossfooter' in which horizontal totals are accumulated, and 18 other vertical totalling registers linked in

A third Sensimatic is linked to a tape punch unit which operates as a by-product of ordinary accounting work. The entire data, or selected items, are automatically punched. Also on show is a recent model of the Director accounting machine, with automatic total and carriage opening features.

Another exhibit is a production model of the Sensitronic. Primarily designed for banks, this machine

data. Adding, subtracting, tabula- stripes. Totals are automatically reting, and similar functions are con- corded on these and subsequently picked up.

Carter-Parratt Ltd. • STAND No. 3

A large number of facts can be compactly and easily recorded and analysed by the Brisch-Vistem system of hand-punched cards. Basically different from other methods, it employs relatively large cards, indexed by characteristic rather than by item. There are 1,000 positions on each card. Thus, if 1,000 items were to be classified under 50 heads, only 50 cards would be required. The cards themselves are visibly filed.

After the characteristics have been settled and a coded list of items (things or rersons, numbered in accordance with the card positions) has been drawn up, appropriate holes are punched by a small hand-operated machine. Analysis is done by placing selected cards into a frame, the required items being identified by seeing which holes correspond throughout the pack, and consulting the coded list. In this way it is possible quickly to draw up a list of all persons (say) who had a combination of 10 selected characteristics.

The system is very compact. More than 1,500 cards can be visibly filed in a unit measuring 33in. by 24in.

George Anson & Co. Ltd. STAND No. 43

New this year is the Summary Analysis, a board on which a number of small slips are aligned and held by grooved tongues and a clamp, for board can be used flat or at an angle.

Another approach to certain types of analysis is by hand-punched cards.



Anson's front-feed typewriter

The Visipoint system employs edgepunched cards; and an electric vibrator is supplied.

A handwritten payroll is easily made out on the Anson PAYE. Individual payslips are held in a magazine beneath the surface of a board, and are automatically completed as summary sheets are written.

A versatile combination is the Twintronic-a front-feed typewriter and electric adding-listing machine operated from the typewriter by a detachable solenoid link. The Bookkeeper typewriter has a front feed which automatically aligns forms and releases cards after use. The Bookkeeper accounting machine has a full keyboard and front-feed; adds, subtracts and tabulates; prints in red and black.

Kalamazoo Ltd. STAND No. 8

Copy-Writer posting boards for the quick and easy preparation of handwritten accounts are made in four sizes. Depth is 17in. in all cases; width varies from 14 to 22in. The three-in-one principle is also applied to the receipt writing outfit. Small enough to be carried by a salesman or roundsman, the board saves much unnecessary writing.

A useful adjunct to this equipment is the Summarizer-a large board which permits any selected column(s) from a large number of sheets to be displayed side by side for analysis or totalling. The board is equipped with legs to hold it at an angle for easy reading.

A wide selection of equipment for storing machine accounting documents includes the neat Posting Box. Light and compact, it stands indeis in progress; folds into a lock-up box business.

fast and easy statistical work. The for storage. It is made in several sizes and holds 500 or more sheets.

Logabax Ltd. STAND No. 26

The standard Logabax, with its 198 separate registers, is designed for elaborate analyses of all kinds. The registers are grouped into two 'banks' of 99, and amounts are set in by keys.

On show this year is the standard machine with two illuminated panels which, though not essential to efficient operation, can sometimes considerably improve speed. Purpose of the panels (one per bank) is to indicate by lights the registers in which amounts have been entered. alternative is to work 'blind' and total every register to find out which have been used.

The S.210 is an entirely new model with a third extra bank containing nine registers, which operate like the unit registers in the other two banks. The addition of the third bank permits amounts to be inserted into three separate registers at once, allowing, in effect, a third factor to be totalled during analysis, if desired. Alternatively, during totalling out, amounts can be transferred between any three registers.

The new machine therefore has



Standard Logabar with panel

enhanced flexibility. It also operates at greater speed.

Manifoldia Ltd. STAND No. 24

A recent addition to this company's products is the Manilink, a synchronized unit connecting a fully automatic front-feed typewriter and electric adding-listing machine. The link permits the adding machine to be operated direct from the typewriter keyboard, thus providing, in effect, an accounting machine, which, in view of its reasonable cost, is pendently on rubber feet while work especially suitable for the smaller

For handwritten records, there is the Manicopy posting board.

Ledger cards and other small accounting documents are filed visibly and with maximum space economy in Manipost equipment. Cards are staggered horizontally so that the angled top right corner and righthand edge of each is visible, and kept in rows in a tray. Correct spacing occurs automatically, the cards fitting



Manifoldia's Manilink

over rods in the tray base. When any one is withdrawn an 'out' signal immediately indicates its absence from file. Cabinet capacities vary from 500 to 6,000 cards; trolleys are available.

Moore's Modern Methods Ltd. STAND No. 74

Machine and hand-written accounting equipment is exhibited on this stand.

Pre-printed accounting forms, designed for every business purpose, include more than 200 standard rulings. In the Rapidpost range there is a billing board for hand-written records; posting trays; and stationery and binders in various patterns. Hand-written wages and PAYE records can be completed quickly and easily on Totax slotted cards which show all entries on a single sheet.

Machine accounting equipment includes posting trays; visible filing systems; binders; and several trolleys.

National Cash Register Co. Ltd.

STAND No. 83

There are two new models of the Class 31 and 32 direct entry accounting machines. Both have full amount keyboard and typewriter keyboard, automatic carriage positioning and column selection. Control is exercised by changeable programme bars.

The 31, described as an "accounting multiplier," has an extra one-row

underwood efficiency speeds your business

The NEW Underwood Sundstrand postmaster '92' duplex portable accounting machine

A low cost Accounting Machine with a range of features previously associated only with larger models, including Two Registers, each with Direct Subtraction and Credit Balance features, Auto full and intermediate electric Carriage Return, Keyboard Programme Control and instant conversion to a Duplex Adding Machine.

The ALL NEW **Underwood "TOUCH-MASTER**

The only typewriter with 'Golden Touch' . . . the lightest touch in standard typewriter history. Now-up to 37% less typing effort!

Electric Typewriters Continuous Form Machines

Statistical Tabulators **Accounting Machines**

Underwood ... Standard Typewriters Sundstrand Adding Machines Elliott Fisher . Writing Machines Accounting Machines

See the complete range of mechanised writing and accounting equipment on

UNDERWOOD BUSINESS MACHINES LTD., 4-12 New Oxford Street, London W.C.I. Telephone: CHAncery 3131 Manchester Branch: 129 Portland Street, Manchester | Tel: Central 7024/5/6 FACTORY, BRIGHTON, SUSSEX keyboard which governs the automatic multiplying function.

The highly automated *Post-tronic* is intended chiefly for banks. Electronically operated, it can 'read' the balance on ledger cards, signal overdrawn accounts, compute and print out new balances. Accuracy of each calculation is verified by the machine before it prints the product, any error being cleared automatically.



National's 31 accounting multiplier

For the smaller office, the 18K fills a useful gap between large accounting machine and adding machine. Small and reasonably priced, it has all the functions of an electric addinglisting machine plus a semi-automatic long carriage, three-letter abbreviation keybank, automatic date printing and direct credit balance.

Percy Jones (Twinlock) Ltd. • STAND No. 79

Cheque-writing, PAYE, ledger-posting and other accounting work can be done on the *Twinlock* billing board. Designed so that the operator can complete three documents in a single writing, it is equipped with pegs on which punched stationery is aligned. Forms are pre-printed to suit individual requirements.

A recent addition to the company's machine accounting equipment is the cycle billing system. Ledger and perlarge roll-front cabinet.

Posting trays for use with all kinds of accounting machine are made in three different designs. Some fit into standard filing cabinets, others stand on shelves. All are designed for maximum ease of access to the documents.

Among a range of useful accessories is a revolving desk-side stand for four trays with a total capacity of 4,000 cards; also a one-tray stand adjustable for height.



The Twinlock cycle billing cabinet

sonal record cards are contained in posting trays which are stored in a

Remington Rand Ltd. • STAND Nos. 6 and 103

Special emphasis is placed on the Synchromatic—a set-up consisting of a Foremost 686 accounting machine with a card punch attachment. As normal accounting documents are made out, information from them is automatically punched on Powers or Hollerith cards for use in tabulators or electronic calculators.

All kinds of accounting work can be done on the 686, one of a group named *Foremost*. It has a completely electric numerical and alphabetical keyboard; balances are printed auto-



THE RUF ORGANISATION LTD., CENTRAL BUILDINGS, HORLEY, SURREY. Tel. HORLEY 935 LONDON OFFICE AND SHOWROOMS: OED 37-41 BEDFORD ROW, LONDON W.C.1.





(Above) Underwood's versatile Post-master 92 for book-keeping and adding (Top right) Remington's Foremost 686 can be hooked to a card punch. (Right) Front-feed typewriter and adding machine are linked by the RUF Adjutant



dual cross and vertical totalling.

Sales, accounting, payroll, and many other functions are conveniently and quickly done on the Remington is supplied with a 17 or 24½in. carriage, and the feed is designed to permit independent insertion of two or more small forms and large journal sheets.

Ruf Organisation Ltd. STAND No. 88

Exhibits here comprise electric and manual models of the Intromat front-feed bookkeeping typewriter; a detachable solenoid link which is listing machine; a front-feed typewriter with electric carriage return; and a posting board for handwritten accounts.

Both models of the Intromat and also the front-feed machine have a removable front-feed. That of the electric model has a double magazine so that two forms or sets can be fed in independently. As the operator inserts the cards they are automatically aligned into the correct writing

matically; there is direct subtraction placed over the keys of an Ohdner in this way-sales ledgers, stores in each of the 12 or more registers; electric adding-listing machine. When accounts, hire purchase and so forth. typing accounts, the operator operates the adding machine direct from the numeral keys of the typewriter; other functions are controlled by front-feed typewriter. The machine push-buttons on a plinth on which the typewriter stands. The link is easily removed.

> The Ruf posting board uses unpunched stationery, and is made in several sizes.

The Shannon Ltd. STAND No. 50

The advantages of a visible card index and a manual posting system are cleverly combined in Shannoleaf Visicopier equipment. It comprises used in conjunction with an adding- (1) looseleaf books in which individual record cards are kept, visibly displayed: and (2) a hinged panel, inserted into the books, on which the collective record is made.

This forms a compact, fully visible, and easily maintained method of record-keeping. For a wages application, for instance, employees' records are kept in the looseleaf book. Payroll and perforated wage slips are clipped to the copying board, interthe form of a small box which is other kinds of records can be kept gramme bar.

Underwood Business Machines Ltd. STAND No. 54

Newest member of the large family of Underwood Sundstrand electric accounting machines is the Postmaster 92. It is suitable for a wide range of operations, and can also be used for adding-listing.

The 92 has two registers, each with a capacity one penny under £1 million, direct subtraction and credit balance. All operations are controlled automatically by a programme bar. Several of these are set up according to requirements, and are easily interchanged by the operator.

The Statistical Tabulator is a lowcost two-register machine with a 13in. carriage which automatically tabulates and shuttles through multiple columns on tally rolls or printed forms. Capacity is one penny under £100 million in each register. Also modestly priced is the single-register Class E accounting machine.

The Class D, most comprehensive leaved with carbon, inserted into the of the range, has 10 registers, 24in. binder, and all three records are dual-feed carriage, and many auto-The Adjutant solenoid link takes completed simultaneously. Many matic functions controlled by a propresenting

Maria Maria

The All-New All-Electric Adding/Listing Machine

COMPTOGRAPH

figures

faster than you think.

EXCLUSIVE VISI-BALANCE WINDOW, SUPER-FAST, UNUSUALLY QUIET, COMPACT KEYBOARD, CON-CEALED PAPER ROLL, ADJUSTABLE LEGS, NON-PRINT LEVER, TWO-COLOUR PRINTING, RED POINT COLUMN INDICATOR, AND MANY UTHER FEATURES. omptometer

SALES · SCHOOLS · SERVICES IN LONDON AND PROVINCIAL CITIES

HEAD OFFICE: ALDWYCH HOUSE, ALDWYCH, LONDON, W.C.2. Telephone: HOLBORN 4374

Adding and Calculating

These are new

Automatic transfer calculator (Archimedes) . . . High-speed add-lister (British Olivetti) . . . Electric calculator (Broughton) . . . Adding-listing machines (Bulmer's) . . . High-speed add-lister (Comptometer) multiplication calculator (Monroe) . . . Low-price calculator (Office Machinery)

Archimedes-Diehl-Machine Co. Ltd. STAND No. 55

On show for the first time is the Automatic Transfer Model FR, an inexpensive electric calculator with a back transfer for continuous multiplication. Fully automatic in multiplication and division, it has a pressbutton transfer which switches figures directly back to the keyboard ready for the next operation.

Smallest machine is the Model E with 8 - column entering capacity, direct addition and subtraction, positive or negative multiplication, automatic positive or negative division. Model D has automatic short-cut multiplication through instantaneous multiplier keys; gives true answers to percentage increase-decrease prob-

Also on show are the DS, which has a storage register with full carryover for accumulating products. The recently introduced Model DR has automatic multiplication and division, automatic transfer for continuous multiplication, automatic carriage movement and dial clearance.

Block & Anderson Ltd. STAND No. 80

A range of Victor adding-listing machines is supplemented by American-made Marchant and Swedish Facit calculators.

Hand-operated Victor adding-list- British Olivetti Ltd. ing machines include models for sterling (with and without farthings), feet and inches, hours and minutes. Electric machines are designed for sterling (with or without farthings) adding-listing machine. Its designers

and decimals. All are of the fullkeyboard type.

Of the four small Facit machines, two are hand-operated, two electric. All have simplified keyboards. Capacities of the hand models are 10 x 10 x 19 and 9 x 8 x 13 respectively. The electric CS 1-13 has fully automatic division, semi-automatic multiplication; the CA 1-13 is fully automatic.

Automatic decimal place setting, by pressing a single key, is a feature of the Marchant Deci-Magic. Others in the series are the Figurematic and the Figuremaster, both with pushbutton multiplication. All three are high-speed electric machines.

B.O.S.C.O. Ltd. STAND No. 106

One of the range of Numeria calculators is a portable sterling keyboard model which adds and subtracts in sterling, and multiplies and divides in decimals. A full keyboard machine, it is available with hand or electric operation; has an item counter and split dials. Capacity is 10 x 7

Three other hand-operated and three electric models complete the range. These are decimal models, with varying capacities. All have item counters, and some have split

STAND No. 65

'Fastest ever of its kind' is the claim that Olivetti make for their new Elettrosumma 22, an electric sterling

were briefed on British requirements for a reliable high-speed machine which was not prohibitively priced.

Capacity is one farthing below £1,000 million. Use of a switch converts the machine for wholenumber working. The simplified keyboard has separate keys for all fractions of one penny, 10d, and 11d.: date, non-add and repeat keys. Credit balance is automatic and is printed with an appropriate symbol. The machine withstands rough use.

Other exhibits include the Summa 15, a hand-operated adding-listing machine with 11-column totalling capacity; the Tetractys printing calculator with two registers and a 'memory' and totalling capacity of 13 digits; and the high-speed Divisumma 24 printing calculator.

Broughton & Co. (Bristol) Ltd. STAND No. 68

Latest of the Rheinmetall range of calculators is the SAR IIc S, a fully automatic electric machine. A notable feature is its versatile transfer facilities, which include double back transfer-i.e., from product register



Rheinmetall SAR IIc S

to keyboard and, simultaneously, to storage register. The machine, which has a visible storage register, has a capacity of 9 x 8 x 17 x 17.

There are five other electric machines. These are: the SAR IIc, a close relation to the model described above; the semi-automatic KEL IIc RS, with automatic back transfer, a storage register and a capacity of 9 x 8 x 17; a machine with similar capacity and fully automatic division; and the KEL IIc, the special features of which include electric carriage movement and clearance of carriage register, and fully automatic division. The KEW IIc is a low-priced portable electric machine with semi-automatic multiplication and division.

The D 11c is a hand-operated calculator with automatic division and a capacity of 9 x 8 x 17.

Bulmer's (Calculators) Ltd. • STAND No. 14

Adding-listing machines in the Addo and Addo X series include full or simplified keyboard models, hand or electrically operated, with or without farthings. Capacities vary from one farthing under £1,000 to one



Addo X 7000

penny below £100 million. Some of the machines have credit balance and duplex features.

The large-capacity machines can be fitted with 12in. carriages. A useful feature of the X models is the interlocking key principle, which makes it impossible to press two digits simultaneously. There are three new models in this class—a hand and an electric version of a low-priced credit balance machine, and a duplex.

Calculators on show include the highly - automatic Friden electric range. The S.R.W. model is claimed to be the world's only square-root machine. At the other end of the scale is the Multo, a lever-set manually-operated calculator.



Burrough's twin register addinglisting machine

Burroughs Adding Machine Ltd. • STAND No. 47

A wide selection of adding machines includes the all-electric *Director* series, and electric- or hand-operated *Thriftline* models. All have a full keyboard.

Features of *Director* machines (which are finished in a choice of pastel colours) include five-way adjustable spacing; automatic 'jump' after totalling, which moves the paper up to tear - off position; optional 11½in.-wide carriage, which does not preclude the use of a paper roll, or a split platen which accommodates listing tape and a wide form side by side. There are models for adding only or for addition and subtraction, the latter with or without credit balance. Some machines have two registers.

Thriftline machines are available in various capacities with or without fractions, for addition only, or addition and subtraction. Some electric models have two registers.

Electric calculators include the Series C, full-keyboard machines with six- to 14-digit capacities. All have 'live' keyboard action.

Comptometer Ltd. (Great Britain) • STAND No. 63

Two high-speed electric machines will be seen on this stand. The new Comptograph 101 is a sterling addinglisting machine; the 992 is the most recent of the Comptometer series of electric calculators.

The exceptionally high speed of the 101 adding-listing machine is chiefly due to the design of its printing head. Type is mounted on a revolving drum instead of on bars—

a factor which also makes the machine quiet in action. An exclusive feature is a two-part window known as the Visi-balance. This device enables the operator to anticipate a credit or debit before a sub-total or total is taken, according to whether figures appear in the upper or lower section of the window.

The machine has a simplified keyboard; is housed in a streamlined case; and has a concealed paper roll. Capacity is £1,000 million less one penny. Decimal models are also available.

All four arithmetical functions can be done on the high-speed electric Comptograph 992 calculator, which makes it suitable for every kind of commercial calculation. It has a full keyboard.

London Office Machines Ltd. • STAND No. 76

The Curta calculator is literally pocket-size and weighs only about 8oz. Cylindrical in shape, it is operated by slides; the handle and answer dials are situated on top. The machine adds, subtracts, multiplies and divides; can, in addition, calculate square roots. There are two sizes, one with a capacity of 8 x 6 x 11; the other 11 x 8 x 15. Each has a dust-and shock-proof container.

Another small hand-operated calculator is the 10-key *Precisa 117*. It performs all four arithmetical functions; has a capacity of 9 x 8 x 13.

Monroe Calculating Machine Co. Ltd. • STAND No. 31

Highlighted among a very large selection of calculators and addinglisting machines is the new Model CM. An electric full keyboard machine, made in two capacities, it has fully automatic multiplication and semi-automatic division. It has been designed to accommodate users who want automatic multiplication only and who have hitherto, to have this function, been obliged to buy a more expensive machine which also has automatic division. Capacities are 8 x 8 x 16 and 10 x 10 x 20 respectively. The complementary Model CST has fully automatic division and semi-automatic multiplication.

Other machines on show includthe fully autmatic 66N duplex calculator, with accumulating dials which Put the whole works
at your finger tips

BANDA Systems Machines reproduce every form and docket necessary to control the flow of production and provide accurate costing data, automatically selecting only the instructions and information required by each department or individual. The BANDA 'MASTER' METHOD is in use all over the world. The economy, time saving and smooth running of the BANDA 'MASTER' METHOD can be made to measure precisely to the requirements of your own organisation.

Banda Control

All BANDA machines reproduce up to 7 colours in one operation and may be used for works sketches, plans, maps and staristical returns, in addition to their application to your production and billing routines. The BANDA is so simple to operate that any member of your staff can learn in a few minutes. Whenever 6 to 300 copies are required of anything—you need BANDA in your business. The free advice of our Systems specialist is at your service.

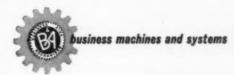
Manufacture Control

Delivery



Head Office:
BANDA HOUSE, CAMBRIDGE GROVE, LONDON, W.S.
Telephone: RIVerside 4121 (20 lines)

London Sales Office: 58-80 KENSINGTON CHURCH[STREET, LONDON, W. 8 Telephone: WEStern 7250 (10 lines)



BRANCHER: BELFART, BIRMINGHAM, BRISTOL, CARDIFF, DUBLIN, LEICESTER, LIVERFOOL, LUTON, MANCHESTER, MIDDLESBROUGE, SHEFFIELD, SOUTHAMPTON, STOKE-ON-TRENT, TUNBRIDGE WELLS



DUNDAR, EDINBUMGES, EXETER, GLASGOW, LEEDS, EWCASTLE, NOTTINGEAM, PRESTON, READING.

MID-SEPTEMBER, 1958



Monroe's Model CM

operate both positively and negatively; the low-priced electric LA7; and the portable hand-operated LN 160-X. A range of full-keyboard adding - listing machines includes wide-carriage models with front-feed for accounting documents.

Muldivo Calculating Machine Co. Ltd. STAND No. 34

Exhibits include Allen full keyboard calculators, Add-Master adding-listing machines Britannic and Madas calculators.

Add-Master machines are of the 12-key type, and there are hand or

electric models. Features include direct subtraction, credit balance and whole number key.

Six different versions of Britannic calculators have varying capacities: all are fitted with tens transmission. The Madas calculators include semiand fully-automatic machines of varying capacities.

National Cash Register Co.

STAND No. 83

Avoirdupois calculations are performed on the Class IIE addinglisting machine. It has a carryover device which automatically converts pounds to quarters, quarters to hundredweights etc. It is made in two capacities-one pound short of 100,000 tons or 10 million tons. It can be supplied with a wide carriage as well as a tally roll.

Other adding-listing machines include the 9H-a full keyboard model which adds, subtracts, shows direct credit balance. Hand-operated, it is supplied with a tally roll or 121in. hand-tabulated carriage.

The 31EN adding-listing machine will be shown linked to a tape-punch.

Office Equipment Distributors (B.T.L.) Ltd.

STAND No. 61

A varied range of Odhner addinglisting machines and calculators is

Typical of the adding models is the electric TC 11C 35 which can undertake stock records, statistics and book-keeping operations in addition to ordinary adding-listing. It is supplied with a choice of carriage widths ranging from 94in. to 18in. Other features include two-way line space - setting, variable tabulator stops, repeat key for multiplication by repeated addition, column indicator to show number of digits set up.

The calculators are portable handoperated lever-set machines, made in several capacities.

Office Machinery Ltd. STAND No. 28

A new addition to the Contex line is the 10-a ten-key calculator which is capable of performing all arithmetical functions. Portable and hand-operated, it is exceptionally low-priced. Also on show is the

BUSINESS





Management decisions depend on fast, accurate

DATA PROCESSING

... and Burroughs machines
like the Typing Sensimatic
deliver the facts faster than ever!

RAW DATA Clock cards, requisitions, invoices, sales slips, cheques or deposit slips, production or inventory figures

INPUT Operator enters data on keyboard; sensing panel automatically programmes the problem

PROCESS Typing Sensimatic automatically computes answers and verifies them

OUTPUT Desired figures and balances are automatically printed on the finished data

FINISHED DATA Up-to-date operating reports for management guidance by the fastest and most direct method

SEE US ON STAND NO. 47

BURROUGHS

world leader in mechanical and electronic data processing

To make today's volume production profitable, management must rely upon data processing for the information on which important decisions are based. One of the latest units in the Burroughs family of data processing equipment is the new Typing Sensimatic Accounting Machine, which combines famed Sensimatic 4-in-1 job versatility with Burroughs' new, fast electric typewriter for the simplest, most direct approach to accounting automation. For complete information write to Burroughs Limited, 356-366 Oxford Street, London, W.1.



★ Basic data processing units—Burroughs adding machines ★ Low-cost bookkeeping with easy-to-operate Director Accounting Machine ★ Sensimatic to Punched-Tape produces current records and media for future processing ★ E101, first low-cost desk-sized electronic computer: broad applicational range

Contex portable adding machine, setting, and several capacities. made with a half keyboard, and small enough to go into a briefcase.

Made in Switzerland, the Ultra 12-key adding-listing machine has recently been introduced here. The H8-S model is hand-operated; can be used for whole number or sterling work: has direct subtraction, automatic credit balance and 11-column totalling capacity. The electric E5 is similar in capacity and other functions to the hand model. Also available is an electric machine with ninecolumn totalling and a model without credit balance.

The Clary Duomatic high-speed adding-listing machine has a totalling capacity one penny under £100 million. There is a hand and an electric are available for sterling or decimal version.

Olympia Business Machines Ltd.

STAND No. 40

A full range of Brunsviga addinglisting machines and calculators, and Adsum adding machines are to be seen here. It includes hand and

There are four hand-operated leverset calculators, with capacities up to 12 x 11 x 20. Also available in this series are twin and triplex machines, and a hand-operated key-set model with a 10 x 8 x 16 capacity.

In the electric series there is a choice of three models. The 11E has semi-automatic division. Its companion, the 11S, features fully automatic division. The higher-capacity 16E has positive and negative multiplication, fully automatic division, and back transfer from product and multiplier registers. The entire range of machines has tens trans-

Brunsviga adding-listing machines operation.

Remington Rand Ltd. STAND Nos. 6 and 103

Only exhibit in this class is the 99 printing calculator. The machine which works in decimals, has fully automatic multiplication and division with push-button control and electric models with key- or lever- automatic clearing. A 10-key mach- out all figures set on the board.

ine, it is easy to use. Each step of the calculation is printed out on the tally roll, credit balances and other minus figures being shown in red.

Underwood Business Machines Ltd. • STAND No. 54

The selection of sterling addinglisting machines in the 55 series includes hand and electrically-operated models, with or without farthings and of varying capacities. Some are equipped with wide carriages so that accounting forms can be made out by direct entry. Decimal models are also available.

The machines are of the 12-key type. Features of hand-operated models include automatic sub-totalling, direct subtraction, automatic credit balance. Operation of electric models is simplified by a three-point control system. Addition, subtraction, non-add, sub-totalling, totalling, and credit balance totals are all performed by three motorized keys. Corrections are quickly made by a single key which automatically wipes

for unique efficiency



Model GS. Standard office typewriter with 92 Characters, double letter space feature, interchangeable carriages, 10 decimal tabulator and many other out-



Model KsT Attractively styled, robust portable typewriter, with 2-colour ribbon economy device, detackable carriage, tabulator, touch control. A light and very

to see those and other Rheinmetall machines . . . visit Stand No. 68 Manchester Efficiency Exhib. Sept. 22nd to 27th.

inmetal

TYPEWRITERS . CALCULATORS . INVOICE MACHINES



For further information write to

RHEINMETALL Business Machines Head Office 6 Priory Road, Bristol 8 Tel 39181/2 **BRANCHES & AGENTS IN PRINCIPAL CITIES**

At the Business Efficiency Exhibition

Visit Stand 14 and get first hand information on the latest and best in Business Machines and modern Efficiency methodsput Bulmers' Stand at the top of your visiting list for the Exhibition!

ADDING MACHINES

The ADDO full keyboard for hand or electrical operation, Standard and Duplex models. ADDO-X simplified keyboard,—complete range of adding-listing machines, wide or narrow carriage. Standard and Duplex models.

ACCOUNTING MACHINES

ADDO-X low priced accounting machines for Sales Ledger. Cycle Billing, Purchase Ledger, Hire Purchase, Stock Control, Cost Accounting, P.A.Y.E., etc.

CALCULATING MACHINES

The PRIDEN fully automatic. Performs more-teps in figurework, without operator de-c. Jons than any other calculator. The MULTO for all general calculating work.

DUPLICATORS & SYSTEMS

The Bulmer 50 Rotary Duplicator. An ideal low-priced duplicator, with many automatic

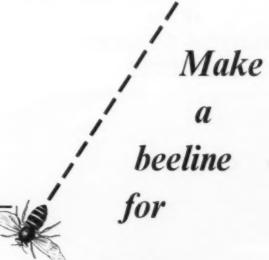
BULMERDEX Card Records. BANKDEX Strip Index and C.V.S. suspended

INTEGRATED DATA **PROCESSING**

The FLEXOWRITER Heavy Duty writing machines. Punches tape as the by-product of any typing job.

JUSTOWRITER Tape operated automatic

OUNTERING TAP Operaced automatic composing—produces even-margin repro-duction proofs or direct image plates automatically. COMPUTYPER, Automatic cape writing and tape-governed calculating features make possible any required degree of billing automation.





STAND No. 14

If unable to attend the Exhibition write for further details to-

BULMERS (CALCULATORS) LTD. EMPIRE HOUSE, ST. MARTINS-LE-GRAND,

LONDON, E.C.1

Telephone: MONARCH 9791

You can see

Addressall

advantages

at the BUSINESS EFFICIENCY EXHIBITION



You can see the latest techniques and the most efficient machines for addressing and all repetition in printing work at the Addressall Stand (Number 53) in the Business Efficiency Exhibition at Manchester, between September 22nd and 27th.

Please send a copy of "Addressall Advantages" to:

NAME____

ADDRESS_____

in YOUR OWN OFFICE



This new brochure explains why the Addressall System is the choice of so many large and small firms. Ask your secretary to send for YOUR COPY—it's free and places you under no obligation whatsoever.

The Addressall system for addressing, indexing and tabulating is one of the most efficient and least expensive on the market. The system is based on the Indexograph typewritable stencil, which is typed in your own office, light and easy to handle. There is a full range of machines, one of which is right for your business.

Addressall

Southampton Row, London, W.C.1.

Tel: HOLborn 1524/8 (5 lines)

Addressing and Mailing

These are new

Re-designed single print addressing machine (Addressall) . . . Personal account system (Adrema) . . . Postage stamp machine (Block and Anderson) . . . Fastfold electric folder (Fordigraph) . . . Catalogue wrapping machine (Unifold)

Addressall Machine Company • STAND No. 53

Small cardboard-framed silk stencils of various types and sizes are used with the addressing machines shown here. Among the hand-operated models is a re-designed singleprint machine, which is fed by hand and works with separate sheets or a roll of labels

The more elaborate Model 90 feeds stencils automatically and stacks them in the same order at the far end. This machine addresses sheets up to about 11in. by 14in. in size; can be made to repeat any plate as often as required or skip unwanted ones. Attachments include an auto-selector and a continuous form-feed.

For addressing envelopes there is the hand-operated 135 with automatic stencil and envelope feed; and the electric 350 which addresses 6,000 envelopes of various sizes per hour.

Other electric models include the all-purpose 300, which has a punched card electrical selector-rejector for automatic sorting. A continuous form-feed unit for the same model deals with forms up to 15in .long.

Addressing Machines Hayward Ltd. e STAND No. 21

All the machines in the Elliott range print addresses by means of mall silk stencils, prepared on an dinary typewriter with a small lowattachment. The cardboard encil frames are colour-coded for machine to address billheads. A

easy identification in file.

Models range from small, singleprint hand or treadle-operated machines to electric special-purpose types which can carry out numerous other functions in addition to 'straight' addressing.

In the second category comes the recent 612, which has automatic stencil feed and ejection, and a builtin selector unit operated by a punched card, covering 22 categories. At the other end of the scale is the small hand-powered 512; an attachment for this enables it to list on continuous stationery.

A special-purpose model, the 299. is designed principally for printing small dockets or labels.

Addressograph-Multigraph Ltd.

STAND No. 16

Demonstrations on this stand are designed to show that Addressograph equipment has many applications in addition to 'straight' addressing. Class 675 models, for example, are intended for the heading and listing of commodities in invoicing. They are small, hand-operated single-print machines with platens which move automatically sideways so that two top copies of forms are made out side by side.

Another application is retail store credit control by means of a plastic card, retained by the customer, and used by salesmen in a small hand

demonstration on plant maintenance shows how recurring operations can be mechanically scheduled and listed. The Class 1650, with numerator and listing attachments, is shown handling paper work routine in factory production control. On another machine with two-column lister, a payroll is made out.

Also on display is the Graphotype machine, which embosses metal plates for use in all hand-operated and electrical Addressograph machines.

Adrema Ltd. STAND No. 7

Easier credit control, error - free and legible billheads, and less writing by sales staff in retail stores, are the aims of the Personal Account System, on show for the first time. Each charge-account customer is given a small plastic plate embossed with his name, address and code



For personal accounts

number. When a credit sale is made, the salesman prints the customer's particulars on the billhead, placing the plate in a small hand-operated addressing machine.

A representative selection of *Bradma* addressing equipment is on show. Exhibits include a recently-redesigned embossing machine, and electrically-and hand-powered printing units.

Among the special purpose machines are: the Cavendish index printer, which works direct from plates attached to ledger or other cards; the Single Print hand-powered unit for non-sequence work (used extensively for the preparation of invoices); and the Bradmaticket, for production of piecework pay coupons used by the clothing, footwear and hosiery industries.

Ambidex Equipment Ltd. • STAND No. 71

Sorting is an important ancillary operation in any efficient mailing scheme. Though simple in conception, Sortofile document sorters allow papers to be classified quickly and easily in a minimal space.

All the equipment is of the same basic design. A number of hinged indexed flaps are fixed to a tray, and documents are placed, loose or in folders, behind these. Smallest model has 25 flaps and will go easily on the smallest deck. Other desk models have 50, 100 or more divisions.

Larger Sortofiles allow one clerk to sort into up to 1,200 divisions without moving from his seat. Sorters are mounted on stands attached to ball-bearing carriage units, allowing the operator to bring any part within easy reach.

Fordigraph Ltd. • STAND No. 100

A recent addition to the Fordigraph range is the Fastfold, a versatile small-size electric folding machine. It handles most kinds of paper in all sizes from 2½in. by 3in. to 14in. by 9¼in. and is said to work at a speed of 14,850 single sheets per hour.

A single control, incorporating a fold diagram, sets the machine to any fold. Two creasing rollers will, when required, produce cross-folds in any position. The machine has self-



Fastfold handles most kinds of paper

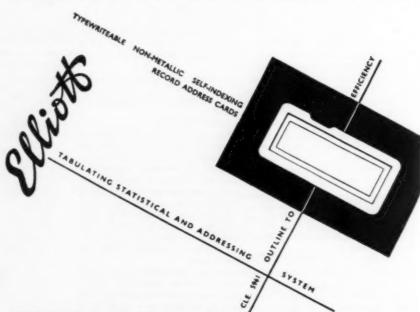
compensating rollers for varying thicknesses, and will therefore handle stapled sheets. It is quiet in operation.

Block & Anderson Ltd. • STAND No. 80

Making its first appearance is the *Bandafix*, a little machine for putting postage stamps on letters or receipts. Loaded with 480-stamp rolls, it automatically guillotines, moistens and

BUSINESS EFFICIENCY EXHIBITION, City Hall, Manchester, September 22-27, 1958

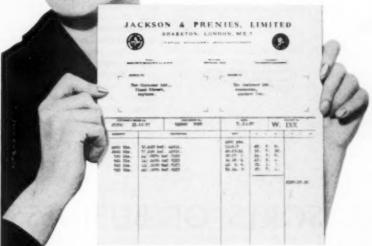
At Stand 21
you will see
a comprehensive
range of the
New Elliott
Addressing and
data reproducing
machines. You
are cordially
invited to
discuss your
addressing or
data reproducing
problem with our
Representatives



ADDRESSING MACHINES HAYWARD LIMITED . 42 BRITTON ST . CLERKENWELL ROAD . LONDON E.C.



Introducing the "Systemat" for dispatch/invoicing



"Systemat"-the new duplicating master-cuts time, cost, typing and checking in vital paperwork operations. It provides for the addition, deletion or substitution of information on succeeding records automatically, combining related clerical tasks in a "one-writing" operation. In Dispatch/Invoicing, for example, procedures commonly involve Acknowledgement, Advice, Consignment, Invoice and related accounting forms. The "Systemat" provides the means for doing all this work with speed, without repetitive typing, with the minimum of checking and-with accuracy. Come and see the "Systemat" on Stand No. 16 at the BUSINESS EFFICIENCY EXHIBITION, Manchester.

Addressograph - Multigraph

RESSOGRAPH-MULTIGRAPH LTD. MAYLANDS AVENUE HEMEL HEMPSTEAD HERTS Tel: Boxmoot 3730



To : Addressograph-Multigraph Ltd., Maylands Ave., Hemel Hempstead, Herts. Please tell me how the "Systemat" can help me with Dispatch Invoicing and other paperwork procedures.

SEPTEMBER, 1958

and has a counting device.

Folding, perforating and scoring can be done by the Bandafold at speeds of up to 15,000 sheets per hour. This small machine is electrically operated and easily set up for different jobs.

Letters are opened or closed at high speed by the Bandamail series of machines. There are three envelwith 12,000 envelopes per hour. Opening is done quickly and easily

hand-operated version, the 200.

letters of any size; there is also a

Kingsbury Office Equipment Ltd.

STAND No. 9

The hand-operated folding machope-sealers, one hand-driven, two ine shown by this company is claimed electric, the fastest of which copes to deal with 6,000 sheets per hour, even allowing for loading time. The machine folds and creases: makes by machines which automatically cut accordion, single, double parallel a tiny sliver off one edge of envelopes. with one crease, and letter (standard) The electric 500 automatically adjusts fold. A gauge at the rear is altered

applies the stamps. It is lockable, itself for thickness, and deals with according to the size of paper used and fold required.

> The machine is finished in grey stove enamel and has chromiumplated fittings.

Roneo-Neopost Ltd. STAND No. 59

Handling and accounting for stamps is completely abolished by the postal franking machines shown on this stand. Accounting is done automatically. The user pays a sum in advance to the post office, and this total is set and locked into the machine. With each franking, the face value is deducted from the total, the current balance being shown on dials in front of the machine.

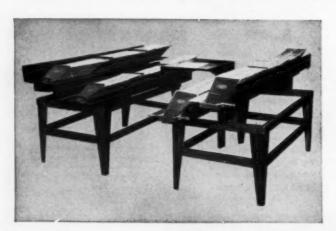
A low-cost hand-operated model is designed for the smaller business: for larger organizations there are electric machines which frank 6,000 letters per hour.

The Frankmaster model, for example, covers every conceivable need. Values up to 99s. 11½d. are set by dials; for bulky letters and parcels there is a built-in holder for a gummed label roll. Franks are



The Bandafix carries 480 stamps and automatically guillotines, moistens, and applies

FOR ALL SORTS OF BUSINESS



AMBIDEX EQUIPMENT LTD.

25-29 COLEMAN STREET, LONDON, E.C.2.

All kinds of sorting of all quantities, sizes and shapes of papers, for all purposes, can be handled with maximum efficiency by AMBIDEX SORTOFILES.

The range of over 200 models, made up from standard components, includes Desk Models with 25 to 150 divisions and floor standing models (as illustrated) with 100 to 1,200 divisions, all designed to meet individual requirements in every waysorting classifications, size of papers, capacity of divisions, number of divisions etc.

Applications include pre-sorting for Filing, Mailing, Ledger-posting, Analysis and Dissection, Costing, Sales Records, Purchase Records, etc., etc., also quick access temporary filing of documents held pending further action, for example in connection with Outstanding Orders, Invoicing, Cycle Billing, Works Progress, Machine Loading. Transport Planning, and countless other applications in all sorts of business.

Efficiency in sorting is essential to the modern office.

Illustrated literature sent on request.

made on the labels which are torn off and affixed to the packets. Besides showing current totals, the machine counts every piece of mail put through it.

Uni-Fold Mailing Machines Ltd. STAND No. 70

Newest in the Uni-Fold appliances for the mechanization of mailroom operations is the M.3000, which inserts 3,600 booklets or magazines into envelopes per hour. Envelope sizes may range from 8in. by 5in. to 121in. by 10in.; contents from a single postcard to material 1 in. thick.

To save hand tucking, the machine seals the envelopes; but use of a special type which has a safety tuck in addition to the gummed flap leaves the side open for printed paper mail-

Single sheets are folded and enclosed in envelopes by the Model L. Documents are automatically fed into the machine, folded in any required style, and inserted, one by one, into envelopes. The latter may vary from 6in. by 33in. to 9in. by



velopes at the rate of 3,600 booklets per hour and seal the envelopes

4in. in size. Running speed of the machine is 3,600 enclosures per hour.

Among the folding machines are a desk-top model, and a floor standing machine available for suction or hand feeding.

Universal Postal Frankers Ltd. • STANDS Nos. 10 and 29

The range of Frankopost machines is designed to cover the requirements of every size and type of business. For those who mail only 10 to 20 letters per day there is the handoperated Simplex for letters only, chine makes eight different folds.

Frankopost machines can print a return address or advertising slogan when franking



which imprints amounts from \d. to Is. 04d.

More elaborate are the two Multi-Value models, one hand-operated and the other electrically-powered. These frank any value up to 99s. 111d., in a single impression, and are fitted with an automatic trip mechanism to prevent loss of credit through careless operation. The electric model has a device which automatically cuts, feeds and delivers gummed franked labels ready for use on

The Foldopost electric folding ma-

MAIL? It's no trouble to me!

"With a flick of the finger I can select any value of postage rate in one second. My 'FRANKOPOST' Multi-Value postal franking machine prints any postage rate from ½d. upwards (99/111d. if you go that high or less if you wish), plus a nice little advertisement for us in the top left hand corner. And that's not all—my frankopost is just as good for 10 letters a day as it is for 100! We've proved it saves us money—to say nothing of time and temper. No stamps to lick or lose, no post book to keep, our postage account always up to date—and no ready cash hanging around the office. Letters—airmail—parcels etc. Frankopost deals with them all! What more can I say except I wouldn't be without our FRANKOPOST! INSTANT SELECTION - COMPLETE POSTAGE RANGE SIMPLICITY - FOOLPROOF Frankopost the franking machine for all sizes of office SEE US ON STAND 10/29 BUSINESS EFFICIENCY EXHIBITION SEPT. 22-27 1958 UNIVERSAL POSTAL FRANKERS LTD. Victory House, 99/101 Regent St., London, W.1 Tel: Regent 2969 Please send me details of: FRANKOPOST NAME FS.

RIGHT IN THE PICTURE

If an organization is one which portrays modern efficiency, then you will find that I.C.C. equipment is well to the fore. Should your business involve counting large amounts of coinage, speed is always essential, and the Vee-Three Counter is the answer. The E.90 Letter Opener, which opens letters in a fraction of the time that it takes by hand, saves so much more time for the sorting and distributing of mail. Both machines are great time and money savers.





You can see these and all our other equipment demonstrated at

THE BUSINESS EFFICIENCY
EXHIBITION
STAND 94

For establishments such as Canteens, Cinemas, Restaurants, Transport Booking Offices—in fact every cash business—where the requirement is the speedy and accurate giving of change, then the ACRAL W.100 Change Dispenser meets all your needs. The cashier simply presses the key(s) for the change required, which is instantly delivered to the customer by means of the delivery cup.



International Coin Counting Machine Ltd.
17 ALEXANDRA ROAD, ENFIELD, MIDDLESEX Machine Ltd.
17 ALEXANDRA ROAD, ENFIELD, MIDDLESEX

CASH REGISTERS • AUTOGRAPHIC REGISTERS AND TILLS • CHEQUE WRITING AND SIGNING MACHINES . COIN COUNTING AND SORTING MACHINES . NOTE- AND COIN-WEIGHING MACHINES

Cash Handling Equipment

These are new

Speedriter portable register (Egry) . . . Price labelling and 'line-finder' cash registers, moving belt check-out counter, hand-operated price marker (London Office Machines) . . . machine-cash till (Office Machinery) . . . Coin counters and sorter, ticket issuing machine (Oliver)

Acral Ltd. & International Coin Counting respectively. Machine Co. Ltd. STAND No. 94

The Vee-One, manually-operated and portable, counts any coins and has automatic stops in multiples of five up to 60. An electric version, the Vee-Three, counts 2,000 coins per minute; gives a five-figure grand total; and has a four-figure reset counter.

The G.3 counter deals with £1,000 per hour in mixed silver: also counts copper. An optional extra is an index to give grand and sub-totals.

The electric DQ4, in one hour, sorts £1,500 worth of mixed silver coins into four values. Mixed silver is sorted and counted in bulk or into £5 bags by the F.4.

Acral equipment consists of a range of key-operated coin dispensing machines and coin storage trays.

Carter-Davis Ltd. @ STAND No. 41

There are two kinds of Primus autographic register-standard and portable-and each is made in three sizes. The standard model accommodates up to 300 six-part sets of lained in a locked compartment for erence. Carbon is fed automaticfrom a roll. The three sizes are forms measuring 6in. by 4in., 44in. by 6in. to 84in. by 10in. in up per hour. Amounts-set in by an

Easy-to-read PAYE tables for weekly or monthly payrolls are clearly written and scientifically grouped.

Egry Ltd. STAND No. 66

Strong and yet light in weight, the Speedriter portable register takes forms up to 8½in. by 5¾in. in size. Capacity is 100 two-part sets, or half as many four, five or six-part forms.

The Tru-Pak register, a desk-top model, retains one or more carbon copies locked in its case, thereby providing tamper-proof records. There are three models with a maximum form size of 8\in. wide by 11in.

Up to five copies can be made on the Summary model, intended principally for sales work. It retains a continuous summary copy locked

All desk registers can be supplied mounted on a cash till.

Fanfold Ltd. STAND No. 84

Suitable for use in other applicaorms, five of which are ejected, one tions besides cash accounting is the Fanfold lightweight portable register. It is available in four sizes and takes

8½in. by 5½in., and 8½in. by 8½in. to five-part sets. Capacity varies from 150 sets for two-part down to 50 for five-part sets.

Special attention has been paid to carbon economy. The register incorporates an impulse mechanism which moves the carbons fractionally forward each time the ejection lever is depressed.

G. H. Gledhill & Sons Ltd. STAND No. 98

The beautifully made and polished cases of the many Gledhill cash tills stand out in this age of steel and plastic. The tills themselves include a wide range of models, some autographic, some issuing printed receipts.

A useful medium-size model is the autographic Imperial which holds record paper in three widths, varying from about 4in. to 7in. Its partitioned drawer is fitted with a combined secret catch and lock.

Among the many cash registers on show are models with autographic and printed detail strips. A useful feature is the pre-set mechanism which permits several keys to be set and held, pressure on the last triggering off the whole operation.

Halsby & Co. Ltd. STAND No. 86

The Tandem writes and signs forms varying in size from about cheques at the rate of 1,500 or more

adding-machine-like keyboard—are listed and totalled automatically on a tally roll. Signatures are imprinted by copper plates. Figures are shredded into the cheques and printed in indelible inks, while signatures appear against an alteration-proof coloured background. This machine provides maximum security against fraudulent use.

For smaller users there are several Protectograph cheque writers. Amounts are set in by levers or keys, and are imprinted in such a way that forgery is impossible.

Lamson Paragon Ltd. • STAND No. 46

There are several variations of the basic *Paragon* autographic register. The *Security* model accommodates continuous forms from 1½in. by 4in. to 5½in. by 8½in. in size, keeping one copy locked inside. The *Summary*, designed for a cash receipting system, produces and retains small dissected summaries as full-length forms are issued.

Job, stock, hire purchase, and other cards can be made out simultaneously with record forms on the Card Model. Designed for drycleaners and similar undertakings is the Form and Tape register, on which identity tape, work instructions, delivery note, customer's bill and office copy are prepared simultaneously.

The Sales Register includes a large or small cash drawer which is operated by the bill-issuing mechanism. Issue of one set of bills automatically brings forward the next and files a copy in the register.

London Office Machines Ltd. • STAND No. 76

The Sweda series of cash registers includes several special-purpose models. A new machine makes out price labels of pre-packed provisions. Prices are marked by number keys; descriptions imprinted by interchangeable slugs. Also useful for the self-service store is the Speeder moving belt check-out counter.

In the side of the hire-purchase cash-register is a card-slot. The machine imprints full details of each transaction on ledger and personal record cards. The *Receipt* model takes any size of form; and can include facsimile signature plate, cash drawer, numbering device and guillotine.

Manifoldia Ltd., • STAND No. 24

Portable and counter-top versions of the MP autographic register are available. Each type is made in two sizes for stationery measuring up to 8 by 54 in.

The counter sizes can, if desired, just be incorporated into a cash till, the drawer of which is automatically operated by the register handle. When the latter is turned, top copies are automatically ejected, one copy is filed inside the machine, and a fresh form is fed into position and is as interleaved with carbon. Up to six copies can be taken.

National Cash Register Co. Ltd. • STAND No. 76

Special emphasis is placed on two classes of cash register—the *Itematic* and the *Class* 6000.

The *Itematic* is compact and reasonably priced. It makes individual recordings in eight categories for analysis of cash and credit sales, also money received on account and paid out. Any amount from one farthing to £99 19s. 11½d. can be recorded at a single operation. An itemized copy of each transaction is recorded on a tally roll locked in the machine.

Totals can be analysed under 12 different heads in the 6000 machines. Most recent is the Add/Subtract which can record deductions—e.g. returned empties, trade discounts etc.

Office Machinery Ltd. • STAND No. 28

A new cash till incorporates the small half-keyboard *Contex* adding machine. As the total key of the adding machine is pressed, the drawer opens automatically. Summaries are made on an autographic roll.

The *Universal* money checker is a very sensitive and accurate cash weighing machine for notes or coin. Its clear scale indicates immediately the correctness or otherwise of the weight. Adjustments can be made to suit any currency.

Cheques can be written in 12 different currencies on the *Checker*, available with three different capacities.

Oliver Typewriter Manufacturing Co. Ltd. • STAND No. 64

A new range of counting machines handles all British coins. There are four models—one hand-operated, the others electric. All are easily adjusted for different coins; have preset stops or can count until the total capacity of the machine has been reached.

Date and hour are stamped automatically on tickets issued by the new *Oliver* machine. It is available as a single unit or in banks of up to six.

The range of *Riv* cash registers includes electric and manual models which issue itemized tickets and enter all transactions on a built-in tally roll.

Roneo-Neopost Ltd. • STAND No. 59

The high value of National Insurance stamps makes them tempting bait for the petty thief. This danger can be obviated by using a franking machine designed for the purpose. It operates on the same principle as a postal franker, advance payments being made to the Ministry of Pensions. Separate detachable units are used for each stamp value, these being small enough to lock away in a safe.

For speed and safety in preparing cheques, dividend warrants, there are two mechanical signature devices; one for cheques, the other for larger documents. These produce 800 or more signatures per hour.

Universal Postal Frankers Ltd. STAND Nos. 10 and 29

With the *Director* cheque signing machine (available as either an electric or a hand-operated model) from one to four signatures can be imprinted at one operation at speeds of up to 80 per minute, it is said. A visible counter records the number of cheques passed through.

Up to 900 treasury notes per minute can be counted and put in batches of 100 on the *Totometer Mark 3*. Postal orders, tickets, coupons, and smilarly-sized items can also be counted. If desired, the machine can be made to overprint or mutilate the documents.

It's "Direct-Speech"...



with the Centrum press-button system. Instant intercommunication between key personnel, to and from every department of office and works, is the first benefit Centrum brings to your business. In no other way is it possible to have such direct contact with and control over staff. The Centrum Direct Speech Intercom scores all along the line in saving time, locating staff, giving instructions and getting information in double quick time.

Installation is simple, and a network of from two to over a thousand stations, all intercommunicating if desired, can be built up to suit every size and type of business, and added to as progress demands.

Other features of the Centrum Direct Speech Intercom include:

- Press-Button selection Double call signal
- Dependable operation Full privacy
- High quality reproduction Full flexibility

SEE THIS EQUIPMENT ON STAND No. 76
AT THE BUSINESS EFFICIENCY EXHIBITION, MANCHESTER



10: London Office Machines, Terminal House, Grosvenor Gardens, London, S.W.1 Please send full details of Centrum Direct-Speech Intercom Systems to:

NAME

ADDRESS



LONDON OFFICE MACHINES LTD.

Terminal House, Grosvenor Gardens, London, S.W.1 Phone: SLOane 1861, 1626, 3263

BELFAST - BIRMINGHAM - BRISTOL - DUBLIN - GLASGOW - LEEDS - MANCHESTER NEWCASTLE - NORWICH - NOTTINGHAM - SOUTHAMPTON

Every business operation—manufacturing, buying, selling, collecting and disbursing money, accounting—depends on the printed form. Well-designed, properly integrated forms increase efficiency and effect substantial economies in business administration. Fanfold Limited are specialists in the design and production of business stationery and form-feed equipment. Whether your business is large or small, up to the minute experience on paperwork problems is at your disposal without obligation.



Fanfold Continuous Stationers



Speedotype



Continuous Fuvalones



Transkrit Sets or Pads



Sprocket-Punched Stationery



Carbon Impulse Registe



Carbaline Feed

Development of new products goes on apace. . . . Continuous envelopes for all wage a pplications are available now with self-sealing flaps, whilst the new Carbali ne feed will take a hectographic carbon on a tabulator for applications which demand multiple copies of invoices or other documents.

Come and see us on Stand No. 84 at the Business Efficiency Exhibition, Manchester. Ask for a demonstration of the new Porta-Filer (the only portable security register on the market.)

FANFOLD for forms

FANFOLD LIMITED BRIDPORT ROAD LONDON N.18
Telephone: EDMonton 5404 (6 lines)
Telegrams: Busiforms, Norphone, London
City Sales Office: 74-75 Walting Street, London, E.C.4.
Telephone: CITy 378!

GLASGOW · BIRMINGHAM · MANCHESTER · NEWCASTLE LEICESTER · LEEDS · CARDIFF · DUBLIN

Business

forms are our business

Continuous Stationery

These are new

Continuous form burster (Egry) . . . Electric typewriter attachment and long-form attachment for standard typewriters (Lamson Paragon)

Carter-Davis Ltd. STAND No. 41

Designed to fit any typewriter or accounting machine, the Primus continuous stationery attachment consists of a light framework which is easily removed to leave the machine free for ordinary work.

Each set of forms is individually designed to fit the user's requirements. The number of sets can be varied, and each can be printed on different coloured papers, or in different colours with various distinguishing marks. In this way identification of each copy is made simpler. The forms are perforated for easy separation, and for subsequent insertion into prepared envelopes.

Egry Ltd. STAND No. 66

To be exhibited for the first time is the Divi-Burster, a machine which separates continuous forms at high speed and performs many other functions. Forms varying from 2in. to 20in, wide and from 33in, to 17in. in depth are dealt with at speeds up to 30,000 forms per hour.

The machine can break the forms at every perforation or at alternate ones, as required. It can also trim off sprocket-punched edges, winding the waste paper on to a reel inside. Separated forms are stacked on a self- various types of machine and for a Sets of forms are detached by a paper

сгеаse.

The Divi-Burster is easy to operate and quiet in action, since it has no gears, chains or striking levers. Plexiglass hood.

The Universal Speed-Feed con- be accommodated in the same set. tinuous stationery attachment for dent unit. It travels smoothly on ball races in unison with the movements requires no change in the typewriter's grade of carbon. construction and imposes no extra strain on the carriage.

eight-part sets of interfolded forms. carbon. After typing a set, the oper-These are correctly fed by a dual ator removes the carbons and sepaligning-pin device, which engages arates the forms by a single sharp punched holes at the head of each tug on the perforated edge. set. A built-in carbon holder obviates the need for interleaved onetime carbons.

When the machine is required for ordinary work, the Speed-Feed attachment is merely tilted back without distrubing the forms and carbon loaded on it.

Fanfold Ltd. STAND No. 84

adjusting platform which is auto- wide range of applications is on view matically lowered as the contents in- here. Fanfold forms, for use on billing machines or, in conjunction with the Fanfold Adaptor on standard typewriters, are supplied interleaved with one-time carbon or spot-Operating parts are covered with a carbonized. This type of stationery permits forms of different widths to

Interfold stationery can be used typewriters is an entirely indepen- without an attachment on any typewriter. For flexibility, carbons are held on a bar-a method which alof the machine carriage. Suitable for lows the typist to change any one use with most standard makes, it sheet at any time and to use any

Also on show are snap-out carbon sets. These are non-continuous sets The attachment handles up to of forms interleaved with one-time

Imperial Typewriters Ltd. STAND No. 2

An economy feature of the Imperial No. 133 continuous stationery typewriter is that one initial carbon loading is sufficient to make out about 150 sets of forms. The carbons are automatically positioned as each succeeding set of forms is typed.

The machine is suitable for use Continuous stationery for use in with fanfold or interfold stationery.

knife positioned on the bail bar.

Supplied with a 12in, carriage, the typewriter takes stationery up to 10in. wide; the 15in, carriage accommodates 13½in, stationery. Standard form depth is 11in, in either case.

Since the carbon carrier and stationery can be removed, different kinds of forms may be typed on the same machine. Optional fitments are a left- or right-hand palm tabulator or a decimal tabulator.



Imperial's 133 continuous stationery typewriter (above) and Lamson Paragon's Parabar attachment for standard typewriters

Lamson Paragon Ltd. STAND No. 46

Latest of this company's typewriter attachments, designed to ease and speed the production of continuous forms, is the *Formaliner* high-speed electric typewriter feed. Multisprockets engage a number of marginally-punched holes simultaneously, thereby ensuring accurate registration on each copy of every form.

Another recent introduction is the Long Form Model D for standard typewriters. Designed for businesses who require heavily-detailed purchase orders, shipping documents, etc., it will take forms up to 12ir. deep.

Also on show is the improved *Para-bar* typewriter form-feed equipment which eliminates carbon handling.



Carbons are shifted automatically as typewritten forms are withdrawn from the machine. A more elaborate form-feed mechanism is designed for use with fanfolded stationery.

Sales checking and loose-leaf systems, various types of continuous forms, snap-apart stationery, carbon copy books and forms can also be seen on this stand.

Manifoldia Ltd. STAND No. 24

The Maniframe is a lightweight attachment which can be fitted on to the platen of almost any standard typewriter. It incorporates one or two special-quality durable typewriter ribbons which, threaded between sets of continuous stationery, obviates the need for carbon. The attachment is securely held in position by the bail bar of the typewriter.

For more than three sets of continuous stationery, the *Manihar* attachment is used. This small device, which rests on the rear of the typewriter behind the carriage, holds

CONTINUOUS STATIONERY the modern way

The typist — a vital link in the chain of production, marketing and distribution. Through her typewriter flow the Works Orders, Despatch Notes, Invoices, Purchase Orders and the many other forms essential to business. Far too often, however, her production suffers through unnecessary repetitive typing, and time wasted in the handling of carbon paper and loose forms.

If this is your problem may we show you how the Econojet Typewriter Attachment, with Econoset Continuous Stationery, reduces unproductive operations to the barest minimum.

PETTY AND SONS LIMITED

Whitehall Printeries . Leeds 12

Telephone: Leeds 32341



Top Management consult Paragon on Continuous Stationery



A top-level discussion was in progress. Deep deliberation was being given to the question of economy of paperwork.

Yes, consult PARAGON on all questions concerning continuous stationery, for use with :-

- **★ AUTOGRAPHIC REGISTERS**
- **★** TYPEWRITER BILLING MACHINES
- **★** STANDARD TYPEWRITERS
- **★** BOOK-KEEPING MACHINES
- * TELEPRINTERS
- * ADDRESSING MACHINES
- **★** PUNCHED CARD ACCOUNTING MACHINES
- **★** and COMPUTERS

B.E.E. MANCHESTER

B.E.E. Lamson Paragon Ltd

PARAGON WORKS, LONDON, E.16 Telephone: ALBert Dock 3232 STAND No. 46

a 'carbon glove'. The glove comprises a stiff backing sheet to which sheets of high grade-carbon are firmly anchored. Length of the backing material is extended beyond the end of the carbon so that it can be torn off along the perforations, thus providing a fresh alignment of the stationery. This means that every part of the carbon sheet is used.

The Maniwriter is a device which provides continuous stationery for handwritten records. Its use completely obviates the time-wasting operation of inserting carbons into receipt-books and similar duplicate records. Forms are held on a flat bed, slightly tilted towards the operator to make writing easier. Fanfolded stationery is used and, after completion, is pulled out towards the user and torn off against the cuttingedge. Forms in varying depths and widths are available. One set may contain forms of different widths, if required, so that packing notes or similar documents without prices can be produced at the same writing as complete forms.

Where forms of different colours are required in a single set, interfolded stationery can be used.

Petty & Sons Ltd. • STAND No. 44

An ordinary typewriter can be converted into a billing machine by using the Econojet attachment and Econorite stationery. The attachment places no weight on the typewriter and does not interfere with its use for ordinary work. It can be attached or disengaged with one hand in a matter of moments.

Stationery is interleaved with ordinary sheet carbon, which is automatically moved to the next set of forms as the ready-typed set is detached. Although economical, this system provides clean and legible

A dual-control principle ensures that form-heads are aligned without the use of punched holes.

Underwood Business Machines Ltd. STAND No. 54

Four machines on this stand include manual and electric models based on standard typewriter design or of the flatbed type. All are designed for the quick and easy produc-

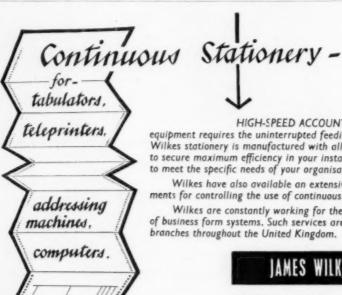


Underwood's typewriter framework

tion of multi-copy business forms of

The manual Underwood continuous form machine comprises a standard typewriter plus a special framework to hold and feed continuous stationery. Carbon is interleaved continuously. The other model of this machine has completely electrified action, including keyboard.

Elliott Fisher flatbed machines are also available with manual or electric action. In both cases, continuous stationery passes below the typewriter keyboard, which moves over it as the operator works. Carbon is fed from a continuous roll. In the electric model, keyboard, carriage return, transfer of carbon and other functions are entirely automatic.



HIGH-SPEED ACCOUNTING on modern office equipment requires the uninterrupted feeding of continuous stationery. Wilkes stationery is manufactured with all the precision necessary to secure maximum efficiency in your installation and is designed to meet the specific needs of your organisation.

Wilkes have also available an extensive range of devices and attachments for controlling the use of continuous forms over office machinery.

Wilkes are constantly working for the advancement and development of business form systems. Such services are available to you from branches throughout the United Kingdom.

IAMES WILKES LIMITED

BILSTON . STAFFS . PHONE BILSTON 41971

Specialists in Continuous Stationery and Business Form Systems

BRANCHES AT: LONDON . BIRMINGHAM . MANCHESTER

GLASGOW · BRISTOL · LEEDS · LIVERPOOL · LEICESTER

MONROE achieve substantial price reductions

us ed

of

e-

STAND No 31

Busixess Efficiency Exhibition September 22nd-27th. It is with real satisfaction that we announce substantial price reductions throughout the whole range of Monroe Adding-Calculators.
The fully automatic Monroe 8N from £428 to £385.

The popular semi-automatic CST-8 from £253 to £225.

Reductions, too, in the prices of all other models.

Needless to say there has been no sacrifice of Monroe quality. Nor has the cost of labour or materials fallen. In fact both have risen—but so have our sales. Because we believe that the demand for our mach nes will continue to rise we are able to make these far-reaching concessions.

Monroe Calculators range from simple hand-operated models to the world's most advanced machines. With Monroe you can bank on the best advice on choosing and using your machine, the best value for money and the most efficient and reliable after-sales service.

For further particulars or to arrange demonstration please write to your local Monroe branch or to our Head Office.



MONROE CALCULATING MACHINE COMPANY LIMITED
Bush House, Aldwych, London, W.C.2.
COVent Garden 0211

Branches in Birmingham, Bristol, Cardiff, Glasgow, Leeds and Manchester.



The farmer knew his onions

Scarecrow-methods . . . are highly successful in farming—but are quite useless in business. Precious seconds, costly minutes fly away—unnoticed—unless you watch them carefully at every stage:

through time recorders (personnel 'IN' and 'OUT') on the production lines, throughout the factory—with all time synchronised by Magneta Master Clocks.

Sound signals too play a vital part. They are all automatically linked, pre-set to a master-plan: controlling factory hooters, staff location, fire alarms, etc.

The Versatile Magneta System greatly simplifies 'instant check' accountancy records, speeds up personnel movement . . . output . . . productivity . . . profits.

Magneta's free Advisory Service is yours for the asking. Just write or phone.

Business knows the efficiency of MAGNETA FOR 'TIME' & 'SOUND'

Magneta Time Co. Ltd., Goblin Works, Leatherhead, Surrey. Tel: Ashtead 866.

Control and Planning

These are new

GripsOn stock-marking system (Adapta) . . . Magnetic wall chart (Archimedes) . . . Automatic production recording system and "time elimination" system (IBM) . . . Redesigned clocks (Telephone Rentals)

Adapta-Charts Ltd. STAND No. 104

Versatility is the keynote of Movigraph wall charts. Based on black pegboard which can be cut to any size, they are marked by coloured plastic signals to which elastic flowlines can be attached. Also available are strip-type signals on which words or numbers can be written. Graphs can also be plotted on the board.

Two recent additions are the Rotadate and the Picturegraph. The first consists of four interchangeable panels, which allow continuous plotting without disturbing existing signals. The second is a camouflage device: confidential charts are supplied with a cabinet on the door of which is a coloured plasticised print. Closed, it looks like a framed picture.

A new stockmarking system known as *GripsOn* comprises interlocking plastic letters and figures which adhere to any smooth surface.

Archimedes-Diehl-Machine Co. Ltd. • STAND No. 55

Visual planning of all kinds can be done on the Magnet Dispo, on view for the first time. It is based on a metal board, made in different sizes and laid out according to individual requirements. Data are charted by rectangular coloured magnetic signals with a surface on which names or other details can be written. Persunnel location charts, for example, can therefore show not only how many people are employed in any



Vidento wallchart

place at any time, but also their names.

Eureka planning boards include the AV-Dispo, a multiple-channel chart which holds small cards; and the Disponent, which has 120 indexed vertical columns containing coloured strips moved by plastic wheels. The Vidento has 63 vertical columns of small metal balls raised and lowered by push-buttons.

Block & Anderson Ltd. STAND No. 80

Background of the *Plan-flex* wall chart is a white board, ruled into a grid. Down the left-hand edge is a strip index; across the top is marked the date, in days, months or other periods. Signal material consists of coloured, self-adhesive strips, which may be written on in pencil, ink or ballpoint pen, and cut to any length.

The Productrol wall chart has a

black pegboard base. On the left side is a visible card index — an arrangement which permits a substantial amount of information to be kept ready to hand. Each horizontal column represents a flowline for one of the items shown on the index. Vertical columns are marked to individual requirements.

Carter-Parratt Ltd. • STAND No. 3

A great deal of information can be shown in very little space on the Vistamatic wallchart. It comprises any number of removable panels, clipped into a framework. Each panel contains 100 sets of small rectangular coloured signals, each hung on a little rod and turned over with tweezers. Standard sets contain seven colours; twice as many can be supplied.

On the left of the chart is a strip index panel; across the top is a similar index. All information, therefore, apart from the words and numbers on the index, is shown by colourcode. Set up for a stock control system, part names might be written down the side, numbers representing tens or units across the top. The colour-code would indicate stock position for each item.

Dacron (Plan-O-Matic) Ltd. • STAND No. 32

The *Plan-O-Matic* visual control system is built up from a number of small self-contained units, assembled

in multiples within a framework for wall mounting. Each unit contains 16 numbered discs, a slide-in index strip and—a recent addition—coloured plastic sliding signals.

The discs revolve vertically, are numbered round the circumference with the digits 0 to 9, and are turned by a small pointer. Any number composed of up to 16 digits can therefore be shown. If fewer digits are required, un-numbered colour-coded discs may be used.

The index strips beneath the discs may be typed or written on. Coloured strips slide partly over them to represent yet another set of facts.

Gledhill-Brook Time Recorders Ltd. • STAND No. 98

Mechanical and electrical attendance and job recorders of many sizes and patterns are exhibited here.

Typical of the small attendance recorders is the Desk Autograph, designed for office workers. Encased in mahogany or oak, it measures only 9½ in. by 16 in. by 7 in. high. A mechanical eight-day clock is incorporated. By depressing a lever, the employee registers his time of arrival; then signs his name on the space provided on a continuous, automatically fed, roll of paper.

The large Clipper may work mechanically or from the mains. The machine automatically positions cards; cannot overstamp; and has an automatic shift device so that records appear in alternate columns day by day.

IBM United Kingdom Ltd. • STAND No. 77

New exhibit is the Automatic Production Recorder system. This consists of a central console linked to measuring instruments situated throughout a factory production

Among this company's time recorder and master clock systems is the new *Time Elimination Cabinet*, which automatically eliminates nonworking periods during such applications as stamping job record cards. This equipment operates on the *Superelectric* master clock time system, which includes attendance and job time recorders, time stamps and secondary electric clocks with personnel location.



Telephone Rentals' Integrator

Time signal controls on this system may operate on different programmes according to the day or department, and can operate at any minute.

Remington Rand Ltd. STAND Nos. 6 and 103

Several different types of wall-chart, covering every management function are to be seen on this stand. They include the multi-purpose *Graphdex*, based on a slotted board in which rectangular plastic signals are inserted; also a recent version to which magnetic slides are attached.

The Machine Load Planner comprises a number of horizontal channels into which detail cards are slid. The Schedugraph houses and displays numbers of small cards like an outsize visible index.

Roneo Ltd. STAND No. 45

Simple or complex situations can be plotted with equal success on Roneo wall charts. These consist of 25 or 50 horizontal channels into which narrow handwritten or typed paper strips are slid. The channels can be rearranged at will, without disturbing the information they display.

Coloured signals, strung like beads on a thread, can be moved over the surface of the chart and are so arranged that they can 'overtake' one another without interference. A transparent vertical cursor helps signal positions to be easily read.

Siemens Edison Swan Ltd. • STAND No. 33

The exhibits of this company include job costing and process timers, attendance recorders, a watchman control system, and master clock systems.

Time recorders can be operated by A.C. mains with a synchronous motor, or by electrical impulse in a one-minute master clock system. Attendance recorders may also be spring driven.

The Model 80 time recorder, punches a hole in the cards at each registration, thus automatically positioning successive registrations. Printing is done by hand lever. A similar model, the 81, prints automatically.

Telephone Rentals Ltd. STAND No. 56

The Centralograph system provides automatic supervision of production processes. Machines are fitted with a contact which automatically transmits electrical impulses at 26-second intervals to a central recording unit. A telephone-type dial is placed near each machine. When a stoppage occurs, the operator merely dials a code number which is automatically recorded.

At each central recording unit, performance of up to 20 machines is charted on time-calibrated paper. Final link in the chain is the *Integrator*. Fed at 26-second intervals from the control unit, this device translates the information into a series of totals related to target figures analysing machine conditions by means of lamps.

The Shannon Ltd. • STAND No. 50

The standard Shannoplan wall chart comprises a frame 46in. wide by 41½in. deep, into which four separate and interchangeable panels are fitted. Each panel has 55 channels into which coloured strips of plastic are slid, and a unit to hold 5in. by 3in. record cards.

How the chart is set up depends entirely on the requirements of the user but the chart is equally suitable for planning budgets, sales, production, progress, and so forth.



Look! - one hand!

Figures at your finger tips

10 times faster with

FACIT

Yes, one hand is all you need to span the ten keys of the world's finest calculator, one hand to set the brilliant automatic brain speeding through all your figure work, while your other hand is free to Jot down the answers as they spring up before your eyes. If there's space in your office for a telephone, there's room for a FACIT, hand or electrically operated. Ten

oy us a m. be er, ch si-

es on

th isnd

it. ar ge a lly

it,

is

er.

a-

m

les als ng of

all de our els

of in.

18

he hie

5

minutes with ten keys are all you need to become a competent FACIT operator and do all your figure work ten times faster.

Branches: Beitast, Birmingham, Bristol, Cardiff, Dublin, Dundee, Edinburgh, Exeter, Glasgow, Leeds, Leicester, Liverpool, Luton, Manchester, Middlesbrough, Newcastle, Nottingham, Preston, Reading, Sheffield, Southampton Stoke-on-Treas, Tunbridge Wells



Get in touch with

BLOCK & ANDERSON

IMITED

Head Office

BANDA HOUSE, CAMBRIDGE GROVE, HAMMERSMITH, LONDON, W.S. Tel : RIVerside 4121 (20 lines)

London Sales Office:

58-60 KENSINGTON CHURCH STREET, LONDON W.8 Tel: WEStern 7250 (10 lines)



We've got the perfect office team!

MY SECRETARY, MYSELF AND OUR TIME-MASTER

I remember when dictation was chaos—one interruption after another. Now, I dictate at leisure on to one of those amazing little Dictabelts, and my secretary fits the typing in whenever she likes. And not only letters. Reports, memos, and all those notes I used to jot down, too. The Time-Master saves both of us hours of unnecessary work every week.

Installing the Time-Master was the best day's work I ever did!

You cannot know all the advantages of owning a Dictaphone Time-Master until you've lived with it for a veek. Try it—free. Write to Dictaphone Co. Ltd., 17-19 Stratford Place, London W.I. Sales and Service in 68 Countries.



The Dictabelt record—main reason why Dictaphone Time-Master far outsells all other dictating machines

NOTHING CAN COMPARE WITH

DICTAPHONE

TIME-MASTER

The words DICTAPHONE, TIME-MASTER, and DICTABELT are registered trade marks

DICTAPHONE ALSO MANUFACTURE TELECORD-WORLD'S FINEST NETWORK DICTATION SYSTEM

Dictating and Recording

These are new

Redesigned machines and centralized system (Aga) . . . Improved machines, new accessories (Assmann) . . . Telephone recorder and Dictet pocket recorder (Dictaphone) . . . Illuminated stations for centralized systems (Edison)

Aga Dictating Machine Co. STAND No. 36

A completely revised version of the Agavox dictating machine, known as the Model C, incorporates a new microphone, simpler controls and automatic telephone recording. The long-life plastic discs take six or 12 minutes' dictation.

The machine has three dictating controls, all located on the microphone: record-playback: start-stop; and jump-back. Recording position on the first is indicated by a red light. The jump-back control covers the whole recording.

Dictation and transcription can be done on the Model C. Playback is through loudspeaker or microphone, selected by a switch. There are three playback speeds, and a hand or foot control. The machine measures 12in. by 9½in, by 5½in., and weighs 15lb.

New improvements in the Teledictation central dictating system have enhanced performance and general efficiency. The system may be operated through separate wiring or existing internal telephones (which, in most cases, require no modifications) and incorporates a full range of push-button controls.

Assman Dictating Systems 9 STAND No. 92

On show for the first time are the Assman Mark II universal recorder nd the Mark II transcriber. Main ature of these machines, which use



Assmann Dictating Machine

grooved plastic magnetic discs, is a new sapphire-guided recording head which, it is said, gives a recording life of 10 years or more without loss of

The sapphire keeps the combined record-erase-playback head exactly in the centre of the track, so that the sides of the grooves do not become worn away. The disc itself incorporates molybdenum disulphide - an effective lubricant which allows each disc to be used 50,000 times.

possible on the new machine. The erase head is only 1/100th of a second in front of the recording portion, so that even a single word can be changed.

Also on show is the re-designed Intel central recording equipment, which is now operated by the voltage on a telephone line, obviating any possibility of the battery trouble which might have occurred with previous models. It can be superinternal phone system, or can be in-

stalled separately where none exists. Full controls are available to the dictator, and as many executives as wish may be connected to the system.

Dictaphone Ltd. STAND No. 11

Dictating machines produced by this company mostly use a transparent plastic belt on which informmation is permanently recorded; the range includes dictating, transcribing and telephone recording

Newest instrument on show is the Telephone Repeater, an accessory to fit under the telephone recording machine. It permits a telephone message to be played back into a telephone line-to a third party.

The Dictator Model A5 is used for recording conferences, law court proceedings, and so on. The equipment provides continuous coverage. Playback and transcription can be Very accurate corrections are carried out while recording is in pro-

> A special display is being made of the Telecord remote control dictation system, which links any number of people by telephone to Time-Master dictating machines.

Only recently available in this country is the Dictet miniature battery - powered tape recorder. Weighing less than 3lb., it can carry 60 minutes' recording on one tape, which can be played back immediimposed on any normal automatic ately or posted to the office for transcription.

E.M.I. Sales & Scrvice Ltd. STAND No. 3

Both recording and transcription can be done on the Emidicta 2403 office model. The instrument makes erasable recordings on lightweight plastic discs of two sizes-to take six or 12 minutes' dictation.

Transcription is made as easy as possible. Indexing systems are simple; speed of the turntable, volume and tone are adjusted by separate



Minifon Wire Recorder

controls grouped together. There are hand or foot controls, and a headset or stethophone.

The Emidicta 2401 is a mainsoperated portable for recording and transcription, and weighs 154lb. Its rigid case has interior compartments for records and microphones. The 2402 battery and spring-motor portable is for recording only, and weighs 174lb. Both machines have slip-on zip-fastened travel covers.

Battery-powered, the tiny Minison wire recorder weighs only 21/1b.

Hartley Electromotives Ltd. • STAND No. 69

The Tape-Riter is a tape-recorder which has been designed for office use and may be used independently or in a centralized system. It is loaded with a cartridge containing a 30minute tape. This is compact and light enough to be mailed. The standard microphone is shaped like a pocket torch and incorporates all the controls, etc. An easy-to-read indicator enables the typist to locate corrections and other details.

For transcription (on the same machine) there is a foot control and a tiny, single earphone. Other accessories include a unit which fastens to the telephone for recording both sides of a conversation; and a very sensitive standing microphone which can be placed on a table

during conterences. A rigid carrying ing; a push-button is used for total case is supplied.

When used in a centralized system, a battery of Tape-Riters is controlled by a single separate unit. Each executive's office is provided with a small wall box on which the microphone is hung. To dictate, he simply lifts the microphone of its hook, presses the 'record' button, and goes ahead.

Office Machinery Ltd. STAND No. 28

The Rex is a combined dictatingrecording machine which uses plastic magnetic discs on which 12 minutes' speech can be recorded. This short recording time is particularly useful when dictation consists mostly of letters, since it enables work to be passed to a secretary at frequent intervals and therefore causes a minimum of delay in transcription.

The machine is exeptionally easy to use, both for the dictator and the typist, it is claimed. As the recordings are made, an automatic indicator moves over a paper strip so that any part of the record can immediately be located for indexing or correction. Corrections are made by over-speaking. Erasure is quickly and easily carried out.

The combined microphone-loud speaker and the hi-fi amplifier incorporated into the machine give extremely clear and true reproduction, it is claimed.

Remington Rand Ltd. STAND Nos. 6 and 103

A unique feature of the Ultravox dictating machine is that a second copy may be taken of any recording if required. This means that an executive away from his office can send one copy of his report to be typed and retain the other for reference.

The machine records on sheets resembling paper. These can be folded without damage to the recording, enabling them to be maned in ordinary envelopes. They can be erased and re-used many times.

Control is largely automatic. Recording is controlled from the microphone, but a red signal light on the machine acts as a double-check.

Errors are corrected by over-speak-

erasure. Indexing is done on an expendable paper slip.

The machine is made in two parts: one for dictation, the other for transcription. The dictation unit is small and flat enough to be carried without inconvenience, and can be used in a

Thomas A. Edison Ltd. STAND No. 42

For convenience and portability the Voicewriter dictating machine is made in two parts, one for recording and the other for transcription. There is also a dual-purpose model. Permanent recordings are made on a vinylite plastic disc, which takes up to 30 minutes' dictation and can be mailed or filed.

The dictating unit is only about 21in. high, 12in. wide and 91in. deep; it weighs about 12lb. including micro-



Voicewriter Dictating Machine

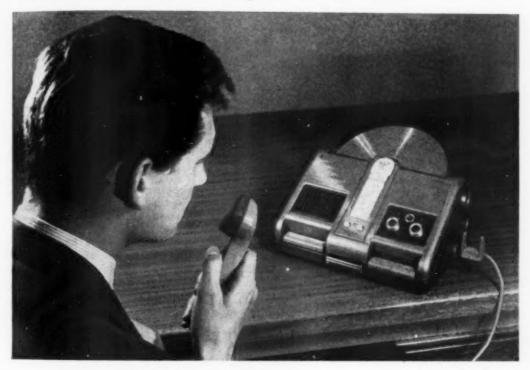
phone. Among its features are fast loading (discs are inserted into the side of the machine and automatically positioned), volume-controlled playback; and a clear, easy, indexing system.

The secretarial model is also small in size, has tone as well as volume control, and the same easy-loading design as the executive machine. A choice of accessories includes single lightweight earpiece, desk speaker, foot or hand control.

Televoicewriter remote control dictation systems for hospital or commercial use are also being demonstrated. These provide any number of executives with special telephones connected to a central pool of machines.

A new device is the illuminated station. This is made for three- or five-channel selector systems and indicates, by means of small lights, which lines are free. This plan cuts the delay which may occur when hunting device is used.

The Dictating Machine that really cuts the cost of correspondence



AGAVOX MODEL C

With the new Agavox Model C you record at the speed of thought. You control the machine completely from the slim hand microphone. The recording medium—a tough plastic disc—slips into the machine like a penny in a slot—and each one of these discs can be used at least 20,000 times. Accurate "pin-punched" indexing of dictation, corrections by over-speaking and automatic telephone recording by pressing a key are some of the many outstanding features of the economic Agavox.

Write or telephone for details. At the Business Efficiency Exhibition, on stand 36, see the Agavox Model C and the Agavox Teledictation System—the very latest remote control dictation equipment.

A famous name in light and sound for over 50 years





all

re

p

dictating machine company

(Proprietors: M & L Haycraft Ltd)

ST. STEPHEN'S HOUSE - WESTMINSTER - LONDON S.W.1 TELEPHONE: WHITEHALL 9618 - 9

BRANCHES: LIVERPOOL . GLASGOW . BIRMINGHAM



BULMERS (CALCULATORS) LTD. 47-51 WORSHIP STREET. LONDON. E.C.2. MONARCH 7991
Branches and Service depots throughout Gt. Britain

Electronic Data Processing

These are new

Tape-punching invoice machine (Broughton) . . . Tape-producing and operated invoicing machine (Bulmer's) . . . Storage units for punched paper tape (Punched Card Accessories)

Broughton & Co. (Bristol) Ltd. STAND No. 68

New to this country is the Germanmade Rheinmetall Model FME, an invoicing machine which combines an electric or manual typewriter with an automatic computing mechanism and a punched tape output. The whole equipment is neatly contained in a wooden desk of conventional shape on top of which the typewriter stands.

To produce an invoice, stores record or other document, the operator types in the quantity, price per unit, or other basic details, followed by the description. As the description is typed, the machine automatically computes the extension and then types in the result. At the same time it totals up the invoice amounts (it has six registers). Each and any of the items may be selected for channelling to the tape output control for automatic punching.

Bulmer's (Calculators) Ltd. STAND No. 14

There are two models of the versatile Flexowriter-a tape-operated tape producing automatic writing designed chiefly for automatic typing. machine. The FPC model produces As the typist produces the original punched tape as a by-product of any material, it is recorded on tape, so ordinary typing job. Selected data, or the whole of the typists' output, machine to produce as many copies ions such as tabulating for the per minute. machine itself-can also be put on



Rheinmetall Model FME (above) is a combined typewriter and automatic computing machine producing punched tape. Bulmer's Flexi writer (right) is a tape-operated automatic writing machine



to re-operate the Flexowriter itself.

The machine can also simultaneously produce edge-punched cards. This means that order processing (and other functions which use permutations of constant data) may be carried out automatically, the edge-punched cards being kept on file and fed back into the machine in any required order for automatic re-typing.

The other Flexowriter, the FL, is ations. that it can be fed back into the are recorded in this way. 'Instruc- as required, completely automatically. IBM United Kingdom Ltd. tions' of various kinds-for punching The machine has a choice of type abulator cards, and control func- faces and works at about 100 words

the tape. The resulting tape may matic billing machine, tape-operated therefore be used in other systems or and tape-producing, which writes and automatically calculates in a single operation. Basic repetitive information is supplied to the machine by punched tape or edge-punched cards; and automatically typed out. 'Raw materials' for calculations are entered by hand on the machine and extensions are worked out and typed automatically. In some cases the machine can completely eliminate manual typing in invoicing oper-

STAND No. 77

In the 604/421 electronic accounting system, I.B.M. have linked two The Friden Computyper is an auto- punched card units-the 604 electronic computer and the 421 punched card tabulator. This provides a small computing system, capable in the printing 150 lines; and punching 100 ditions apply. cards.

control task (as planned with a firm select from data being processed sterling amounts. those items that require a management decision.

National Cash Register Co. Ltd. STAND No. 83

Demonstrations of the 461/2 'common language' punched tape recorder show how the machine can be used to make input material for electronic data processing systems as a byproduct of ordinary operations.

The machine punched five- to eight-channel tape automatically, and may be linked with any National electric accounting, adding or bookkeeping machine or cash register. Flexibility of operation is assured by wired programme boards which can be altered easily by the operator. A typical application is illustrated by hooking up the 461/2 to the Class 31 accounting multiplier which is shown on inventory work.

Powers-Samas Accounting Machines (Sales) Ltd. • STAND No. 91

A major exhibit in this section is the Programme Controlled Computer-an electronic digital computer primarily designed for accounting work in industry and commerce. Predetermined programmes enable it to carry out sequences of arithmetical calculations involving high-speed multiplication, addition, subtraction, and division, and to call 'stored' information into use when required to embrace the whole of an accounting, costing and statistical routine.

Data for processing is fed into the PCC in the form of punched cards. Computations are carried out according to the programme, and the results are punched into cards, prior to the final tabulation.

The PCC exercises 'judgment'at appropriate stages in the calculation it can determine which of space of one minute of reading 150 alternative courses to take, according cards; calculating at electronic speed; to which of various contingent con-

It feeds, processes and punches up Demonstrations of an actual stock to 7,200 cards an hour (120 cards a minute for normal working; 60 cards of merchants and restaurant prop- a minute with full normal and interrietors) will show off both speed of stage working) and works directly operation and system's ability to with either decimal quantities or

Punched Card Accessories Ltd. STAND No. 93

This company's exhibits include storage equipment specially designed for the magnetic and punched paper tapes used in electronic data processing systems.

Reels of delicate magnetic tape are protected against vibration, dust and other hazards in the Safetape cabinet, in which various types of inserts can be used. These include transportable and fixed reel-racks, some with adjustable end-plates; also, if required, drawer units for punched cards. Tape reels rest on rubber-sheathed rods and are interspersed with vibration-damping partitions.

Not on show, but available in the range, are an air-conditioned and a fire-resistant cabinet for magnetic tape storage.

Two new items, of which details are not available at the time of going to press, are the FlexoCarton and Flexindex systems of storing and handling multi-channel punched paper tape.



Safetape Cabinet

The British Tabulating Machine Co. Ltd. • STAND No. 78

The general-purpose Hec electronic computers undertake accounting and other procedures associated with advanced office mechanization, including stock control, costs and budgeting control, sales accounting, production planning, market research and payroll.

The Hollerith 555 electronic calculator brings the benefits of electronic data processing to any Hollerith punched card installation. The 555, with magnetic drum storage and programming facilities, gives rapid self-checking calculating for accounting and other requirements.

Speed of the calculator is governed by that of its imput/output unit, which operates at a speed of 6,000 cards an hour.

The 1036 tape-controlled card punch is designed for centralized accounting systems. Data recorded on paper tape at various points of a dispersed organization is automatically transferred to punched cards in the centralized machine installation, where it can be sorted, collated and tabulated, as required, for normal accountancy production.

Underwood Business Machines Ltd. STAND No. 54

The Underwood Servotyper is an electric typewriter equipped with solenoids and control switches which allow the machine to be operated automatically by external electrical signals. It works at the speed of 10 to 12 characters per second, permitting the precise recording of data fed into the machine direct from source. Thus it is capable of converting the output of comput and electro-mechanical machines into more tangible material. Two models of the Servotyper are on show:

1-Model S.3 features 44 type bars with 88 characters; solenoid operation of all character keys; space bar; shift key; carriage return; and tabulation. Optional features for specific jobs can be built into the machine. 2-Model S.1 is for certain applications where the alphabet is not required. It features numerals and certain controls only; is solenoidoperated on 18 numeric and character keys; has space bar, carriage return and tabulation.

2-999 EXTENSIONS

Push-button efficiency with the NEW



Ling-Master

loudspeaker internal telephone systems

Here is the greatest advance in internal communications—the new Ringmaster. . Internal office calls can be made 5 times faster—there's no dialling or lifting of receivers—the caller simply presses the featherlight buttons corresponding to the extension number required. Voice reproduction is crystal clear and completely natural. The Ringmaster system is particularly flexible; it suits all requirements, small or large—you can have as few as 2 or as many as 999 extensions . . Some of the additional facilities to standard Ringmaster equipment are:

- Visual or acoustic paging
 Public address
- Calling preference Secretary interception

Ask for details how you can revolutionize your office communications with Ringmaster.

AT STAND

BUSINESS EFFICIENCY EXHIBITION . MANCHESTER . SEPTEMBER 22-27th 1958



Speed up office dictation and cut your costs with the



Emidicta dictation systems have been generally accepted by industry, commerce and the professions as an economic and worthwhile proposition, resulting in many cases in a saving of approximately 50% in typists' salaries, besides releasing valuable office space and capital tied up in typists' desks, stools, typewriters, etc. The most modern method—the Emidicta Network—provides a 'planned' network of simple desk microphone units linked via a control board to one or more Emidictas at a recording centre. The microphone unit gives as much control of the remotely placed Emidicta as though it were by your side. Ask the Emidicta Advisory Bureau about cutting your costs.

E.M.I. SALES & SERVICE LTD (OFFICE EQUIPMENT DIVISION) HAYES . MIDDLESEX

London Sales Office: 363-367 Oxford Street, London, W.1 (GROsvenor 71278; MAYfair 6597)
North Region Sales Office: Regent House, Cannon Street, Manchester (Deansgate 6043)
Birminghum Sales Office: City House, 1111/17 John Bright Street, Birmingham, I (Midland 5821)
Scottish Sales Office: 353 Renheld Street, Glasgow, C.2 (Douglas 6061)

Write or phone for details from

Twinlock

LOOSE LEAF BOOKS AND SYSTEMS

For over fifty years Twinlock products have been sold through the Stationery, Printing and Office Equipment Trades. Vhether it is a ledger, minute book, analysis book, hand written billing board system or machine accounting equipment.

product will fulfil your needs

VETRO

SUSPENSION FILING SYSTEMS

Verso Mobil is the

ideal method of converting/your existing fourdrawer cabinets to suspension filing systems. Vetro Lateral suspension filing's primary object is the saving of space. Existing cupboards are easily converted.

A catalogue will be sent on request.

PERCY JONES (Twinlock) LTD.
37 Chancery Lane, W.C.2 CHAncery 8971

SHOWROOMS: MANCHESTER GLASGOW BIRMINGHAM Head Office & Factories: Beckenham Kent

Filing and Records

These are new

Lateral diagonal suspended system (Anson) . . . Small size document shredder (Block and Anderson) . . . Motorized rotary card indexes (Carter-Parratt) . . . Improved suspended filing, new cabinets (Chatwood Milner) . . Large-scale rotary card files (Evertaut) . . . Junior-size document shredder (Halsby) . . . Redesigned suspended system (Percy Jones) . . . Industrial projection printer (Kodak) . . . Plastic-covered four-post binders (Moore's) . . . Redesigned cabinets (Wilson)

Art Metal Construction Co. Ltd.

STAND Nos. 17 and 89

Many variations on the visible-Postindex series. Handwritten postings can be made quickly and easily on the Rapid Stack. This device holds decks of 8in. by 5in. ledger cards, visibly displayed on a number of hinged metal panels fixed to a stand; the panels fold vertically for storage, lie horizontally during writ-

Record cards for stock, sales, purchase, and many other purposes are made in several types and housed in a variety of units. Small quantities are fixed to flat folders which, in turn, are stored in cabinets. Larger numbers are mounted on pull-out trays attached to cabinets. Strip indexes are filed on hinged wall panels or fixed to a stand with a revolving post.

Block & Anderson Ltd. e STAND No. 80

No less important than the filing of useful documents is the destruction of unwanted material. A new addition to the Bandashred range of paper shredders is the Confidential—a machine small enough to be kept and used by an executive in his own office.

Almost silent in action, and using very little power, it reduces paper to cabinet with lift-out trays. a finely-shredded and tangled mass.

Bulmer's (Calculators) Ltd. STAND No. 14

Visible card index cabinets in the Bulmerdex range are made in several card filing theme are covered by the capacities for cards measuring 8in. by 5in. or 6in. by 4in. The cabinets, which may contain from six to 15 trays, have a total capacity varying from 378 to 1,005 cards.

Bankdex strip-index equipment is housed in panels mounted on desk stands or wall units. The strips themselves are made with a one- or twoline capacity and in several colours.

Also to be seen on this stand is C.V.S. suspended filing equipment designed for standard cabinet drawers.

Carter-Parratt Ltd. STAND No. 3

More than 30,000 cards are housed in a single drum in the Cyclocard rotary index. There are one- and two-drum models for index cards, while the multiple-drum Model K holds at least 100,000 punched cards. Electric models have selector-buttons which bring any required compartment to hand. As no slotting or punching is required, existing cards may be used.

Cards in the Vistem system are filed in horizontal rows, staggered so that the slanted tops and right-hand edges are visible. Each row is separated by an indexed divider. Containers include desks, a trolley and a

Other card record systems are filed

in book-type folders or a variety of cabinets.

Chatwood Milner Ltd. • STAND No. 12

A new suspended filing unit known as 4-D Panoramic is an improved version of its predecessor, the Mil-Span. Designed to fit any standard chassis, it consists of 50 sets of quarto or foolscap pocket files, linked together. Improved visibility is achieved by an inclined top bar. The tough yet flexible manilla pockets have clipped corners for easy insertion into the links.

The new series of Nylon Glide steel card index cabinets have five nylon studs at all friction points to make drawers move smoothly. Drawers are fitted with compressor plates and, optionally, with a lock; can be bolted together into units; and are made for four card sizes.

Evertaut Ltd. STAND No. 102

Up to 300,000 small index cards can be stored in the Cardmaster



Feature of Evertaut's Card Master Major is economy of space

Major in a floor space of only 31ft. by 101ft. It comprises two posts, each with 4 or 5 wheels which revolve horizontally on swinging arms. Cards up to 10fn. by 8in. in size are housed in pull-out trays. Desks with builtin card units are also available.

For smaller record systems, the Cardmaster Minor is a single horizontal wheel on an adjustable stand. Rotadex desk-top units have capacities from 500 to 3,000 cards. A new item is the Deskref, a loose card desk pad.

For documents, there is a complete range of lateral suspended filing units, including shelving, cabinets in sections for building up as required, and cupboards. A new item is the Filestore cupboard with a plastic roller shutter.

Expandex Visible Filing Co. Ltd. STAND No. 22

Suspended document filing equipment by this company fits into the drawers of any standard cabinet. It comprises a framework with which folders of several different patterns are used.

Bars on which the files hang have telescopic ends for maximum ease of movement. Transparent protectors have a snap action which enables index strip and protector to be clipped on or removed without sliding either to the end of the bar.

Folders are available in foolscap or quarto sizes: non-standard sizes can be manufactured to special requirements. Patterns include flat and concertina styles, with or without flaps.

Also available is a metal trolley and a portable system housed in a soft, briefcase-type casing.

Frank Wilson & Co STAND No. 97

The versatile Railex lateral suspended filing system is prominently featured here. Tall cabinets are made with space-saving fold-away steel doors, with aluminium roller shutter or roller blind fronts. There is also an entirely new model (no details filing system. Manilla folders, which available at the time of writing). Smaller sizes include a counterheight model, a desk file and a glassfronted cabinet. For existing cup- ally or vertically, in existing or new



Anson's Vistafile (above) is a suspended filing system. Halsby's Typhoon document shredder (right) destroys documents that are redundant Frank Wilson's Railer cabinet (below) is also a suspended file system and features space-saving fold-away doors





boards or recesses, rail fittings are racks or cabinets, and are said to available.

Railex folders are made in foolscap or quarto size and a wide variety of patterns.

the Expanda-a multi-pocket concertina file with rigid covers, made in several sizes: a selection of manilla folders and lever arch and boxfiles. There is also a suspended filing system for use in drawers.

George Anson & Co. Ltd. STAND No. 43

New this year is the Vistafile, a lateral-diagonal-vertical suspended can be chosen from many styles, are attached to a plastic suspension. Folders can be filed laterally, diagondouble filing capacity. Pre-printed system strips and visible signals in 12 colours show facts at a glance.

Also on show is the Visipost visible-Among other folders on display is card filing system. The cards, staggered horizontally for instant location, are filed in indexed rows and housed in cabinets or mobile trolleys.

Halsby & Co. Ltd. STAND No. 86

Letters, used cheques, old passbook sheets, insurance policies, ledger cards, and so forth, are reduced to unreadable fragments by the Typhoon shredder. The machine is absolutely safe to use, as the entry slot is too narrow to allow the fingers to be inserted. Pins, paperclips, etc. cannot damage the blades.

Standard cut is 1.4mm. For extra

The Pharaohs' prototype of our

Visible Record Equipment had a number of disadvantages

These included:

- 1 Some lack of elasticity
- 2 A certain slowness in posting
- 3 A drastic limit in the number of records in reach of one operator
- 4 Portability that was somewhat questionable
- 5 Inadequate signalling facilities

During the last few thousand years constant research has enabled us to eliminate these faults (without too much sacrifice of durability). The Vistem, Bizada, Admindex and Cyclocard systems of today can be operated smoothly and with consummate ease by the fingers of a fully-dressed operator.

We have the widest range of visible record equipment in the world, together with unsurpassed "knowhow" on its application to individual problems.





Come and see us on Stand G.3 at the Business Efficiency Exhibition at City Hall, Manchester, 22nd to 27th September.

Carter-Parratt Limited

IDDESLEIGH HOUSE · CAXTON STREET · LONDON · S.W.I

TELEPHONE: ABBEY 3675

WORKS: SUTTON & BATH

security a special model which shreds J. Glover & Sons Ltd. to 0.7mm, widths is available. The machine processes about 70lb. of paper per hour, the shreds being caught in a plastic bag attached to the back.

Newest model is the Junior, scarcely bigger than a portable typewriter. It embodies all the essential features of the larger machine and is unusually silent in action.



Fylemor lateral filing units save space and are easy to move

STAND No. 67

Space-saving is the aim of Fylemor lateral filing units. These contain twice as much as a standard cabinet but do not occupy any more floor-

A single unit comprises four bays of five shelves each-total height 6ft. 3in. These are mounted on a shallow platform equivalent to the size of the bays themselves plus one gangway-7ft. 3in. by 3ft. 3in. When not in use, the bays are kept close together. To make a gangway between any pair they are gently pushed apart -they glide smoothly and easily.

Shelves are divided into sections by wire rods, making them suitable for any type of non-suspended manilla or box folder. Double units are also available.

Kalamazoo Ltd. STAND No. 8

and placed in loose-leaf binders.

written, typed or addressing machine printed information. A binder 3in thick houses up to 5,000 strips.

Also on view are binders for record cards, which are displayed with the lower edge of each forming a visible index, and separated by tabbed dividers. Another card-binder (not visible) is designed for outdoor use by tradesmen, representatives etc. There are many other binders, plus a range of fire-resistant filing cabinets for various purposes.

Kingsbury Office Equipment Ltd.

STAND No. 9

This steel filing equipment includes one- and two-drawer card filing cabinets designed to be used singly or in multiples; and multidrawer document filing cabinets made on the same basis.

The Popular is a one-drawer cabi-This company's strip-indexes are net available in three sizes for cards displayed on a special type of sheet measuring 5in. by 3in., 6in. by 4in. or 8in. by 5in. respectively. Poly-Each sheet has an index tab. Strips thene roller card index cabinets are are available in five sizes and five made in one-or two-drawer units. colours, and can be used for hand- with a capacity of 1,000 cards per

The dynamic **NEW** idea

The OLD ideafigures buried in records

PLAN-O-MATIC puts all vital figures on view, subject to instant adjustment to the latest position.

The PLAN-O-MATIC CONTROL UNIT SYSTEM is a new basic principle of dynamic figure registration, with colour controls.

It effects large clerical economies through reduction and simplification of recorded data. It provides much superior facilities for all visual Management Controls.

PLAN-O-MATIC is the world's fastest and most practical visual system infinitely adaptable to meet individual conditions and changing circumstances.

It has been installed with great success for-Stock and Materials control-Machine and Factory Loadings-Batch and Job Order Progress-Sales Production forecasts and outputs-Contractsand many other Controls where figures are constantly changing.

> Write for new illustrated brochure BS and mention the subjects of chief interest and the quantities involved

> > Dacron (PLAN-O-MATIC) Ltd.

32 Fitzroy Square, London, W.1. EUSton 5741 Stand 32, Business Efficiency Exhibition, Manchester

SELECTION OF Art Matal BUSINESS EQUIPMENT



Extensive range of Steel Desks for executive, secretarial and general office use,



"ROLLINDEX" Rotary Card Files—thousands of records in revolving wheels quickly brought to hand



Asbestos-lined Steel Planfiles for filing drawings. large or small. Big capacity units with quick reference system.



"POSTINDEX" Visible Record Systems for rapid reference, posting and control. Wide variety of units and systems



STANDS Nos. 17 and 89

Visit our stands at the Business Efficiency Exhibition, MANCHESTER, or post coupon for illustrated catalogue.

To: ART METAL CONSTRUCTION CO., 201 Buckingham Palace Road, London, S.W.1

Please send Catalogue No. 60

Name

Addres

drawer. Optional features are locks, Moore's Modern Methods and stands with castors, rubber feet or legs. There are three 2in.-deep foolscap size drawers in the basic allpurpose cabinet. Nuts and bolts are supplied for assembly into multiple units.

Kodak Ltd. STAND No. 75

Highlight of the display of Recordak microfilm equipment is a new industrial projection printer. makes photographic facsimile prints from 16mm, and 35mm, microfilm negatives in 100ft. rolls or in strips, perforated or unperforated; and magnified from eight to 40 diameters.

The lens gives unusually sharp definition, it is claimed. Focusing, film clamping and winding can be remotely controlled by cords.

Other equipment includes a highspeed microfilm unit which works automatically, filming 350 cheques or 150 letter-size documents per minute. There are two readers, one for commercial, the other for library use. On the processing side there is a 35mm, spiral film processing outfit and a spiral film drier.

STAND No. 74

In the Nimblex system of loose-leaf binders, record sheets are filed visibly in tiers of 25 interspersed with tabbed dividers. When two or more tiers are required under the same index tab, they are separated by dividing sheets.

Binders are designed for record sheets of several sizes, and have varying capacities. They are constructed to stand up to hard wear, and are equipped with a rapidrelease mechanism.

The Minor system is similar to the Nimblex, but is on a smaller scale. Binders are available in two standard

Also to be seen on this stand is the Rockwell visible suspended filing system for use in drawers; and the M.M.M. one-line strip index.

Percy Jones (Twinlock) Ltd. STAND No. 79

The Vetro system of suspended filing for documents is available in several forms. For standard-sized filing cabinets there is a chassis on

which the folders are hung. The lateral system employs open-shelf filing. Folders can be hung in a freestanding chassis or housed in cupboards. There is also a desk-top unit and a wheeled trolley to accommodate smaller numbers of files.

The company's products include a very wide selection of loose-leaf visible systems for hire purchase stock control, spare parts, personnel. and many other records. These are housed in binders of various sizes some small enough to go into a pocket.

Remington Rand Ltd. • STAND Nos. 6 and 103

A number of document-filing systems and units to house them are shown here. They include vertical suspended systems, and 'loose' and suspended folders to fit standard cabinet drawers. Also included are Stripdex strip indexes and specially designed cabinets for card indexes of various sizes and types.

Typical of the document-filing systems is the Variadex, an alphbetical method which uses standing files. This divides each category into



Significant Economy

As a planning figure, you can assume that the annual savings achieved by setting up an ASSMANN Recording Centre are in the order of £120 per dictating point. This saving is in salaries alone, without overheads.

You can also assume a saving of 35% to 50% in typewriters, desks, and space occupied by shorthand typists. The capital cost of installation varies from £75 to £55 per dictating point. The running cost, including full maintenance, is around 6% of capital cost.

The benefits include:-

Letters, memos, minutes, etc., finished earlier. No expenditure on 'Temporaries' at holiday time Better layout of letters, and fewer errors.

Our equipment is fully developed, and proven in operation; incorporates the latest electronic know-how; is simple, and totally reliable.

Would you like to see a Recording Centre in action?

Drop us a line, or telephone.

ASSMANN Dictating Systems Ltd. 27 Craven Street London W.C.1 TRAfalgar 6655

Stolzenberg

. . . . has everything that a basic filing unit should have—toughness, large expansion, security, long life and low cost.

The right interior file for all suspension systems



THE STOLZENBERG PATENT FILE CO. LTD.

14 Queen Victoria Street
London E.C.4

11 Albert Square
Manchester 2

STAND No. 72



How often have you emphasised the need for more space? Many times, no doubt. Well, the illustration above shows you a simple way of solving the problem permanently. The underlying principle of this new filing method—Shannoblic Lateral—is simple. Files build upwards, not outwards, thus making use of all those upper regions which ordinary systems can never fully exploit. This means you cut the space allocated to filing by a half—and still leave room for many more files.

Furthermore, Lateral will go into places which are at present quite useless. Alcoves, wasted corners, odd shelves or wall recesses can all be adapted—thus freeing valuable space for extra staff, equipment or storage.

And how beautifully the system handles! Files are suspended metal-to-metal by a unique single-point T-suspension method. They can't slip or get disordered: identification is instantaneous from the three-way adjustable title-strips which give quick sighting at any level.

Shannoblic Lateral is available in cabinets with retractable doors as illustrated above, plus a complete range to solve any filing space problem—yours included! Send for details now—just jot Shannoblic Lateral on your letterheading—and see exactly how Lateral can answer the space questions you are constantly asking.

(Shannon Systems)

FIRST IN FILING

five colour-coded groups, thus making location easy; it is well-adapted to the needs of the expanding business, and, is suitable for follow-up systems based on file signals. Files are individually colour-coded and tabbed, and are separated by similarly-coded alphabetic dividers.

Roneo Ltd. STAND No. 45

Lateral filing equipment is an important exhibit here. Suspended pockets, made of heavy kraft, are housed in specially-designed units or hung on frameworks which may be erected in existing cupboards or installed in recesses in a building. Steel bays, available in various sizes, may be open-fronted or fitted with leather-cloth roller blinds or steel curtain doors

system. In this case a series of able for use in suspended or free pockets, which may be linked concertina-wise, are suspended from the side rails of a cradle fitted into a filing drawer. Papers are housed in separate inner folders, titled to correspond with the pockets. Steel cabinets for this system are available similarly designed. Post binders, a in a number of colours.

Sankey-Sheldon Ltd. • STAND No. 85

These one-, two-, three- and fourdrawer steel cabinets are equally suitable for suspended or standing files. Where several are placed together, they may be connected by a separate linoleum counter top.

A wide range of accessories is are inner folders in various patterns which hold the contents loose or attached to the covers; for standing files, there are several kinds of guide card, and folders with tabs, 'staggered' in five different positions.

Narrow steel cabinets for vertical lateral filing are supplied with open. roller-blind or roller-shutter fronts.

Stolzenberg Patent File STAND No. 72

The wide selection of file covers For cabinet use, there is the V.80 produced by this company are suitfiling systems. Also on show are indexed reminder books; loose-leaf signature blotting books, a concertina-type collating file which stands independently on its own extension arms; and a document sorter, manilla plan folder, a perforator, and in cabinets of various types.

sundries such as gummed slips and reinforcing rings, complete the range

Several of the covers are designed to hold papers attached to them Devices for this purpose include prongs, flexible metal springs, and loose-leaf rings. Covers for loose papers include gusseted pockets with cloth-hinged fronts, and models with available. For suspended filing, there pockets on one or both sides. All pockets on one or both sides.

The Shannon Ltd. STAND No. 50

Filing systems on view here include several suspended systems for use in cabinets; vertical suspended filing equipment; visible card records in book units or panels; and strip index records.

Maximum visibility is the aim of all the suspended filing systems. In Shannolink units, for example, indexed top edges of the linked folders are inclined slightly backward, so that when the cabinet drawer is opened, the clerk has an index before her. The files can therefore be made to serve subsidiary record purposes. by inserting coloured signals.

Shannoblic vertical files are suspended from a single rail and housed

MICROFILMING THE FAST WAY

Doubtless you know the enormous advantages of using microfilm: saving filing space, insuring against damage or loss of originals, providing a permanent unalterable record.

But did you know that there is a microfilmer which records 150 letter-sized documents in one minute? It's the 'Recordak' High-Speed Microfilmer.

150 in one minute ... just think of the time saved. And the machine is easy to operate, too. Why not ask for a demonstration of this remarkable aid to business efficiency?

TRECORDAK HIGH-SPEED MICROFILMER

The Recordak Division of Kodak Limited 1-4, Beech Street, London, E.C.I. Telephone: Metropolitan 0316 and at II, Peter Street, Manchester 2. Telephone: Blackfriars 6384/5



See the full range of 'Recordak' microfilming equipment on Stand 75 at the

Business Efficiency Exhibition City Hall, Manchester September 22nd - 27th

'Recordak' is a registered trade-mark.

New comfort for executives . . .

Executive chairs need good looks that last—they must be durable and dependable. Every EVERTAUT chair is built to meet those requirements—everyone is smartly designed, soundly made—aimed at years of use without loss of comfort, shape or mechanical smoothness. In every detail there's EXCELLENCE in EVERTAUT chairs—in the finest upholstery, cushioning, castors, mechanisms, frames and finishes. That's why for 30 years EVERTAUT chairs have enjoyed a reputation for quality and value second to none.

For full details of EVERTAUT chairs visit our Stand No. 105 at City Hall, or write to:

EVERTAUT SEATING LTD • DARWEN • LANCS. Telephone DARWEN 1391/2



Telegrams SEATING, DARWEN

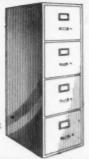
Keep your records SAFE from FIRE

All Chubb Record Protection equipment is Tested and Certified for Fire Resistance. It is strong and compact. And it is carefully designed for the protection of all forms of business records. Come and see us at STAND NO. 58 at the Exhibition or write for full particulars of the complete Chubb range to:

CHUBB & SON'S Lock & Safe Co. Ltd.,

1(7 Deansgate, Manchester, 3
AND AT LONDON, BIRMINGHAM, BRISTOL,
EDINBURGH, GLASGOW, LIVERPOOL,
NEWCASTLE-UPON-TYNE AND DUBLIN, EIRE.
HEAD OFFICE:

175-176 Tottenham Court Road, W.1.

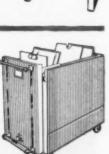


Series M Record Protection File

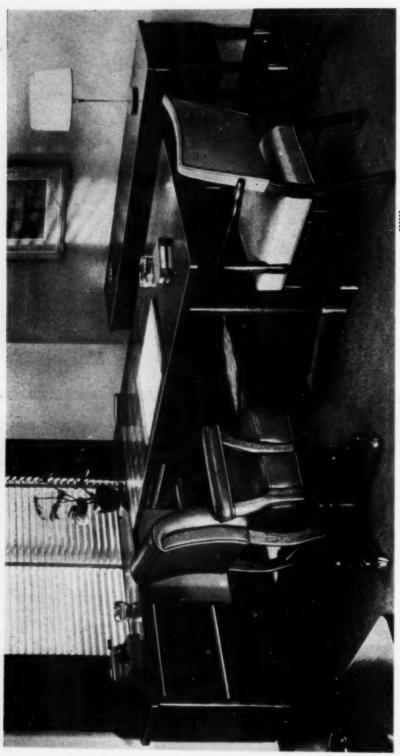


Protection Cabinet





Record Protection Ledger File



A fully illustrated brochure, showing the whole of our range, will gladly be sent on request. Abbott Bros (Southall) Ltd., Abbess Works, Southall, Middx, Tel: SOUthall 1357 Cabless: Abbess, Southall.

make a point of seeing....

the "Abbess" range of executive office furniture displayed on Stand No. 52 at the exhibition. You will be interested in the new Pre-eminent series, designed to give your office an up-to-the-minute look combined with maximum comfort and functional efficiency.

STEEL AND WOODEN FURNITURE FOR EXECUTIVE AND GENERAL OFFICES . DRAWING OFFICE FURNITURE . EXECUTIVE, SECRETARIAL AND GENERAL OFFICE SEATING . FIRE RESISTANT FURNITURE . CUPBOARDS AND SHELVING Systems • Office Sundries

Furniture, Seating, Safes, Storage, Sundries

These are new

Redesigned wooden desks (Abbott) . . . Microfilm storage cabinet (Art Metal) . . Executive suite (Carson) . . . Clothing lockers (Chatwood Milner) . Planstore cabinet and safe (Chubb) . . . Redesigned typist's table (Co-op) . . Posture chair (Dare-Inglis) . . . Office chairs (Evertaut) . . Calculator desk, partitioning (Harvey) . . . Card storage equipment (Jenkins Fidgeon) . . . Zipper looseleaf book, snap-apart stationery (Percy Jones) . Fixed-back chairs, office cupboards (Leabank) . . . Calculator desk, L-shaped unit desks (Matthews) . . . Several office sundries (Ofrex) . Picture window partitions (Sankey-Sheldon) . . . Redesigned staplers (Standard) . . . Office seating (Tan-Sad)

Abbott Bros. (Southall) Ltd. STAND No. 52

Included in the Pre-Eminent range of mahogany furniture for executives are desks of various patterns; occasional and boardroom tables; large and small cabinets for general-purpose filing and dictation machines; and bookcases. All of the pieces harmonize with one another, so that make up a suite. Also on show is typewriter platform. a selection of office seating, among which the executive EPC1 posture chair is given special prominence.

Among the Pre-Eminent desks are two angle-top models and a straighttop pattern, all with a wide overhang



D-shaped overhang for conferences

so that several executives may be comfortably seated round them for

others have two. Fittings include suspended filing drawers, complete with interior framework. Small cabinets in the same series, with drawers or double doors, may be linked with a connecting top.

In the Export series (also in mahogany) there is a re-designed Dshaped one-pedestal desk for executive or receptionist's use: also a any combination may be selected to secretarial model with retractable

Art Metal Construction Co. STANDS Nos. 17 and 89

To keep pace with the requirements of the increasing number of microfilm users, a new steel microfilm cabinet has been produced. Suitable for storage of 35mm, or 16mm, microfilm, it can hold a total of 351 of the larger, 581 of the smaller films, stored in their own cartons. The steel cabinet has seven drawers each divided into four compartments with corresponding index tabs on the front for easy location of contents. Ventilation, an essential for microfilm storage, is provided by louvres onferences. Some have one pedestal; at top and bottom of the back plate. choice of timber for the new Cam-



Airline desk

A large selection of metal office furniture includes desks for executive, secretarial, and general office use, in a variety of styles and sizes. There is an assortment of tables for occasional, general and boardroom use; and also filing cabinets of all kinds for documents or index cards. Other storage requirements in factory and office are met by cupboards, shelving and glass-fronted bookcases.

Included in the display is solid metal and half-glazed sectional partitioning of various types for factory or office use.

Carson Bros. (Productions)

STAND No. 57

Teak is the rather uncommon



Cambridge desk in teak features a suspended-files drawer

bridge executive suite (also made in maghogany, walnut or oak). Centrepiece is a double-pedestal desk containing three standard drawers on one side, and a suspended-files drawer and a shallow drawer on the other. The remaining items comprise a small writing table, telephone side-table, a double-door cupboard with adjustable shelves, and a bookcase. There and an occasional chair.

The versatile O-line desk has a completely independent top. The pedestals can be used separately as small tables or lockers; or placed facing in opposite directions to accommodate two workers at one desk.

Other wooden furniture includes the Action secretarial desk. This has a typewriter platform which retracts, complete with machine, into one pedestal when not in use; a large, pullout tray; a fitted accessories drawer; and four deep pigeonholes for files.

There are also executive desks of various sizes, made in oak, mahogany or walnut.

glass-fronted bookcases; and sliding- occurs even in the worst conditions. door cupboards. A recent addition is a system of clothes lockers built on the extension principle to use minimal floor-space.

A range of safes covers several sizes and types offering protection against blowpipes, explosives, drills and/or fire. Fitted document safes are designed primarily for fire-resistance.

Other items on view include steel partitioning, vault doors, steel roller shutters; and hospital ward lockers in several patterns.

Chubb & Son's Lock & Safe Co. Ltd.

STAND No. 58

On this stand will be seen protecis also a revolving chair, an armchair, tive devices for documents, index cards, plans and microfilm; also safes and transportation boxes.

Fire-resistant units are designed to

els with a variety of internal fittings; ensure that no damage to contents Card-filing units include wheeled and static cabinets fitted with drawers or trays, and a visible card index cabinet. A larger cabinet with shelves or drawers is suitable for books, cards or loose papers. For correspondence, there are fire-resistant filing cabinets in standard sizes and pat-

> Two recent additions to the range are a steel microfilm unit, lined with wood and fitted with seven drawers; and a planfile where hundreds of drawings may be stored rolled and indexed in individual compartments.

> Safes include the burglar- and fireresistant Warwick, and a larger model designed to counter blowpipes and drills. A small wall-safe may have a conventional or combination lock.

> For cash in transit there are steel boxes and cowhide bags, the latter with wrist- or waist-bands. Valuables kept in drawers may be protected from pilferage by a steel cashbox.

Chubb's Warwick safe (right) is burglar- and fire-proof: Chatwood Milner's steel furniture includes executive deaks in the Milsuite series and fitted cupboards (see below)



Chatwood Milner Ltd. • STAND No. 12

Steel furniture in the Milsuite series includes several executive desks; a selection of tables; secretarial desks, some with typewriter cupboards; continuous desking; a typist model embodying five shallow stationery drawers; and several types of chair.

Filing is represented by standardtype cabinets; 'composite' models for index cards and documents: and a model which includes a small built-in safe. For valuable card indexes and papers, there are mobile and static fireproofed units. Plan filing cabinets are designed in two-drawer units which can be built up into cabinets.

A large selection of steel cupboards includes tall and counter-height mod-





We've increased our sales since we installed



*The picture shows part of the new Cambridge suite. Craftsman-made in teak to give a lifetime of service.

See this and other items in our range on Stand 57, Business Efficiency Exhibition, City Hall, Manchester, September 22 - 27.

Carson furniture* in our office

Of course. Carson furniture builds prestige essential to success in business. Can you honestly say that your office reflects your business standing? If you can, then you must be using Carson furniture already. If not, isn't it time you wrote for our illustrated catalogue of office furniture?

CARSON BROS. (PRODUCTIONS) LIMITED HONYWOOD ROAD, BASILDON, ESSEX TEL. BASILDON 20244 (4 LINES)

Co-operative Wholesale Society Ltd. • STAND No. 108

The Dudley range of steel office furniture includes desks for executives, clerks and typists; filing and card index cabinets; punched card storage cabinets; cupboards; clothing lockers; a safe; and a cash box.

Among them is a roller-shutter cabinet containing two index drawers with compressor plates, six stationery drawers and one shelf. It is 52in. high, 23in. deep and 221in. wide.

A useful typist's desk comprises a tubular-steel-legged table topped with red Formica. Attached to the legs on the left and at a slightly lower level than the desk top, is a pedestal housing four stationery trays. A falldown door retracts into the top of the pedestal when the desk is in use.

An executive steel desk has a dark blue plastic-covered top, four shallow drawers, and a deep drawer for quarto-sized files. The knee-hole drawer controls an automatic locking

Designed for the transport of punched cards (but equally suitable for other purposes) is a three-shelved steel trolley, fitted with 4in. rubbertyred swivel castors.

Dare-Inglis Products Ltd. STAND No. 60

Tubular - steel - framed chairs and stools in a large variety of patterns and finishes, for use in offices, canteens and factories, are displayed on this stand. Also on show are a number of tables, large and small, of differing heights and shapes, executive and general office desks, and upholstered settees.

Among the upholstered chairs are swivel and static posture models, with and without arms; a variety of side, easy, and occasional chairs; two- and three-seater settees. In the Dipro series there are stacking chairs with and without arms, with onepiece moulded seat and back in several alternative patterns.

Latest addition to the range of chairs is the Du-al J.28, an executive swivel posture chair. Designed for chairs are upright models with maximum comfort, it has a back which adjusts for height and angle, a fully-sprung seat which can be other traditional designs. They are the secretary who wants a maximumraised or lowered, and padded arms. available in oak or mahogany finish, size working surface, there is the



Upholstered chair made by Dare-Inglis allows the executive to swivel round easily. Other chairs in the series include static posture models and chairs without arms.

materials for upholstery.

Desks include two executive twopedestal models, one with a curved top, and two one-pedestal general office or secretarial desks, all with PVC lino tops.

D. Matthews & Son Ltd. STAND No. 25

A new oak desk designed for calculator operators has an inlaid linoleum top, and a recessed and angled machine well. The overall length of the top is either 4ft. 6in. or 5ft., the width being 2ft. 6in. in both cases. There is a choice of four pedestal arrangements.

Uniformity desking includes Lshaped and straight units. Made in a standard width (just over 2ft) and with five standard pedestals, it is fashioned in oak with tops of hardwearing inlaid linoleum. Non-standard widths can be made to special requirements.

The very large range of furniture to be seen in this stand includes 'reproduction" executive suites in Chippendale and Hepplewhite styles. These pieces are hand-carved and veneered, and have inlaid hide tops. A typical example is a writing desk in curl mahogany with curved front. containing four drawers in each pedestal and a good-sized kneehole drawer. The top is inlaid with goldembossed leather. Walnut and oak finishes are also available.

Included among the reproduction wooden backs carved in Prince of Wales Feathers, Wheatsheaf and this range of metal furniture. For

ing armchairs are made for each pattern.

Evertaut Seating Ltd. STAND No. 105

Among this seating range are three new chairs for executives, one for typists, and two for draughtsmen, (details are not available at the time of going to press).

The executive chairs include the E.68, a large and comfortable model covered in hide, uncut moquette or leathercloth, in a wide range of colours. With a fully-sprung and padded seat, and sponge rubber arms and back, it has a pedestal base of heavy cast metal. This is mounted on castors and has a tilting action adjustable for tension. The chair is adjustable for height.

Typical of the typists' posture chairs is the E.104. Well padded with latex foam in seat and back, and upholstered in green, brown or grey uncut moquette or Vynide, it is framed in steel finished with grey stove enamel. Backrest and seat height are fully adjustable.

Clerical chairs are made with or without arms in a variety of colours and finishes. Secretarial models are made with full-size or small back-

G. A. Harvey & Co. London Ltd. STAND No. 49

There are several new models in There is a wide and varied choice of and have hide-covered seats. Match- Thanet desk, which has a retractable



h

el

15

Not just a desk . . .







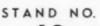


... A COMPLETE SUITE

If you wish your office to look impressive as well as efficient, the new 400-Style Suite is the answer. A basic design of exceptional merit has been adapted to a full range of complementary units. Varying desk capacities and facilities may be provided for each member of an organisation whilst maintaining harmony and dignity throughout the furnishing scheme. Immaculately styled, with many interesting features, and built to engineering standards, the 400-Style Suite marks an important advance in the fitting-out of

business premises. Please ask for Brochure BU999.





49

BUSINESS EFFICIENCY EXHIBITION MANCHESTER

400-Style Double Pedestal Desk



400-STYLE

a matching suite of office furniture in steel



G. A. HARVEY & CO. (LONDON) LTD., WOOLWICH ROAD, LONDON, S.E.7. GREenwich 3232 (22 lines



Features of the Thanet desks are a large working area and ample box or filing drawers. Desks come in a variety of pastel shades

typewriter pedestal. The other pedes- Leabank Office Equipment tal has one box and one filing Ltd. drawer, or three box drawers.

Specifically designed for machine operators is the Thanet machine office furniture and seating are table, with an angled well on the right-hand side. The table has a locking knee-space drawer beneath the lino - covered writing surface. Standard finish is grey, but other colours can be supplied.

Attractive pastel colour combinations are a notable feature of the wide range of desks, bookcases, cabinets and cupboards in the 400style series. Among them is sage green/terra-cotta/grey,tan/terra-cotta wedgwood, kerry and azure blue, nile green/mid green.

Other furniture includes filing cabinets; cupboards and desks in various patterns; card index cabinets: book racks; letter trays; and waste paper tubs. Two new items are barrier-type partitioning and a lowheight double-door cupboard.

Jenkins Fidgeon Ltd. STAND No. 35

Storage units for punched cards and tabulator accessories are featured cabinets and desk travs. on this stand. Other exhibits include filing cabinets, cupboards, clothing lockers, steel shelving, and medicine cupboards.

Stelvetite (plastic bonded to metal) is used for the tops of counterheight punched card cabinets. A waste-basket is also made of this attractive new material.

A punched card transport trolley accommodates 12 trays, each containing 2,250 65/80 column cards. and has large, enclosed castors. For tabulator plugboards there is a sliding-door counter-height cabinet which holds 10 quadruple panels. A desk pulling file has 12 removable trays for 65/80 column cards and holds about 36,000.

STAND No. 82

Among this company's range of several new models. Sliding-door steel cupboards are made in two sizes. The DBS-72in. wide, 40in. high and 18in. deep-has a fitted centre division and two adjustable thelves. The SBS, is similar in height depth, and shelf arrangement, but is 36in, wide,

A new series of fixed-back chairs has seats and backs made of polished plywood. Heights are adjustable. varying from between 16in. to 21in. in the lowest model, to between 29in. to 33in. in the highest. A non-adjustable armless side chair is framed in square tubular steel; and its sprung seat and back are upholstered in vinyl, cord or moquette.

Other seating includes a wide choice of executive and general office chairs with or without arms; and models for drawing office and factory. There is also a range of unit desking; filing cabinets, cupboards as waste paper bins, card index

Executive furniture includes one- for full visibility. Two types are

and two-pedestal desks, filing cabinets and chairs.

Office Machinery Ltd. • STAND No. 28

All-purpose cantilever chairs in the Metchair range are strong and lightweight. Framed in steel, with chrome or enamel finish, they are well padded in seat and back, and can be had with vynide, moquette or bedford cord upholstery in a choice of colours.

Typists are well catered for in this range, which includes models with adjustable seats and backs in various shapes, different degrees of padding and a choice of upholstery materials and colours.

For canteen and other public halls, there are stacking chairs in several patterns, with rigid or canvas seats and continuous steel frames or separate legs, and a number of other seats with or without arms. The Tycoon executive range comprises several adjustable revolving chairs.

Ofrex Ltd. STAND No. 20

A new durable, carbon-type material is designed for use in autographic registers. Made by a new process, it makes sharply-defined copies which cannot be erased or smudged, and are clean in use.

Another exhibit is pure silk typewriter ribbon with an un-inked leading edge which enables the typist and display units; and sundries such to keep her fingers clean during replacement.

New suspension files have flat tops

A twelve-tray trolley made by Jenkins Fidgeon for punched cards that have to be transported from one place to another. It holds up to 2,250 cards



design for

All that an up-to-date office requires of its furniture — smooth functional efficiency; graceful, integrated styling; enduring robustness and space-saving design — Leabank now fulfils in steel.



progress by Be sure to inspect the full range of Leabank furniture. Several new items on show

STAND NO. 82
BUSINESS EFFICIENCY EXHIBITION,
MANCHESTER

LEABANK

Member of the Owen Organisation

LEABANK OFFICE EQUIPMENT LTD.

Clifton House, Euston Road, London N.W.1. Tel. Euston 1474-6





Ofrex Ltd. make a marking outfit for writing on paper, china, plastic etc. (see left) and also self-adhesive tabs in plastic (see above)

available-continuous and link. The files are supplied in batches of 50 with or without carrier rails, and with suspension bars in green, grey, red or blue.

Self-adhesive index tabs are made in 6in. strips of stout plastic, which are cut by the user to his own requirements. Available in several colours, they adhere to almost any surface.

A marking outfit for writing on paper, plastic, china etc., has a fillable body and interchangeable felt nibs. It uses quick-drying fadeless ink.

A new stiff-backed plastic looseleaf folder, in quarto or foolscap size contains transparent plastic envelopes. The 805 stapler fastens up to 40 sheets of standard weight paper together.

Other exhibits include stencils, edge-binders, and a reinforcing punch.

Owen & Randall (Stor Cabinets) Ltd. STAND No. 87

Made of metal and finished in stove enamel, this range of multidrawer cabinets is designed to accommodate articles as varied as tiny scientific or medical instruments, small spares, or full-sized document

A few samples will illustrate the diversity of the range. The R.15/30 models comprise 30 drawers, each less than lin. deep, with or without locks. Twenty-one drawers, slightly more than 11in. deep, are contained in the R.15/21 size. Varying numbers of drawers of the same depths are available in other models.

R.V.F.15 combination cabinet, with one foolscap-size drawer for suspended files, and eight other drawers in graduated sizes above it. Four 21in .high drawers 111in, wide and 161in. deep are fitted in one of the RXL

Interior fittings include removable divisions for articles like small spares; spring-loaded compressor plates for card and correspondence filing drawers; and slotted longitudinal dividers for the storage of micro-slides.

Percy Jones (Twinlock) Ltd. STAND No. 79

To be exhibited for the first time is the Zipper ring-book, for travellers. Covered with dark blue or brown PVC, it is fitted with all-round slide fastener for the protection of records.

For catalogues, there is a variety of looseleaf covers in different materials and finishes. Accounting documents of all kinds are catered for by stout post, thong or split-ring binders of varying sizes and capacities. Stationery for these is also supplied.

A new line, intended to save labour in the preparation of multipart forms, is snap-apart stationery. Forms, designed to users' requirements as to size and printing, are ready assembled in sets and interleaved with one time carbon. After filling in, a sharp tug on the perforated edges separates the forms and removes the carbons simultaneously.

Roneo Ltd. STAND No. 45

Because of space limitations this At the other end of the scale is the company has confined its exhibits in

this division to certain pieces of unit furniture, designed to demonstrate the versatility of the system and its attractive appearance.

The desking covers sizes from 42in, to 78in, wide and is available in two back-to-front depths-27in, and 34in. Independent units or continuous lengths can be made up as desired. Components include a pedestal designed to accommodate a variety of drawer arrangements; and another made like an open cupboard. with provision for adjustable shelf or vertical dividers, or for holding a typewriter.

Desk corners are rounded, and the tops are edged with highly-polished binding. Top surfaces are made of battleship linoleum. Drawer pulls, of moulded plastic, are easy to handle and attractive in appearance.

Sankey-Sheldon Ltd. • STAND No. 85

A new picture-window partitioning, made of steel, accommodates spans of glass up to 10ft wide. Like the standard partitioning by this company, it is demountable and does not damage the floor.

Masterform steel furniture is comprised of five basic units-pedestal, panel end, back panel, top, and kneehole drawer-from which no fewer than 70 variations can be built up. Independent units include singleand double-pedestal desks, a secretarial desk with retractable typewriter platform, and tables with two or more drawers and/or cupboards. Continuous desking, assembled from



Picture-window partitioning

these same units, is economical in both space and money, two desks being able to share one pedestal. Accessories include filing and stationery drawers, sliding reference shelves, and card-index drawers with adjustable dividers.

Relaxin the lap of





DE LUXE MODEL V.26

As all executives know only too well, and too often ignore, hustle and bustle is not a true indication of efficiency. A correctly relaxed body encourages an orderly mind.

Creative alertness is so important in these competitive days when so many of us in the nature of things, must "take it sitting down".

Tan-Sad seating is designed to produce this calm yet dynamic efficiency.

Tan-Sad

THE TAN-SAD CHAIR CO. (1931) LTD., LINCOLN HOUSE, 296-302 HIGH HOLBORN, LONDON, W.C.1.

Telephone: CHAncery 9231/7

hibits include glass-fronted bookcases, cupboards, stationery cabinets, letter trays, and waste baskets. There is also a selection of office and reception chairs, with emphasis on attractive upholstery and colours.

Standard Office Supplies Co. • STAND No. 23

Paper-handling equipment is a speciality of this company. Among their exhibits is a complete range of American-made Ace staplers, all redesigned; other stapling and tacking machines; staple removers; paper drills, guillotines and trimmers.

Staplers include standard and heavy duty models, some pedalpowered. The versatile 49 can be loaded with staples of three different leg lengths. For jobs which require a stapler with a very long reach, there are the Luna models in 8in., 10in., 12in., and 16in, sizes.

Also on show is a wide selection of paper drills. One model of the Drillit has four heads; others have two or three heads. For punching sheets for looseleaf, thong and other binders there is the Superex punch. The Quadrupunch can make up to five round holes. Other items are a reinforcing perforator, and a combined punch-eye letter.

The company's display includes several types of telephone directory holder for table use or mounted on a wheeled framework, a mobile table for typists or machine operators: a five-tray letter rack; and a combined letter and parcel balance.

The Shannon Ltd. STAND No. 50

Truly versatile is this company's 846 wooden 'system' furniture. Though it comprises only two basic 'skeleton' units, these may be assembled in dozens of different ways. There is also a very wide choice of fitments-for example, no fewer than 60 desk drawer arrangements are available.

Layouts are designed to suit individual requirements. Basic units are a table-top with one pedestal and a plain table, both with legs at only

Standard steel desks are available one end. Assembled in the simplest not fully adjustable, is extra large to in a variety of patterns. Other ex- way-in an L-shape, for a secretary, perhaps-these might incorporate a special stationery drawer in the pedestal, a bookcase for files or ledgers in the second unit.

A space-saving arrangement for an accounts office comprises a central table with 'staggered' single-pedestal units branching out at right-angles on either side. A cross-shaped formation accommodates at least four clerks and provides copious space for records

None of the arrangements is permanent, so that the furniture is freely adaptable for changing requirements or new premises. Where privacy is desirable, specially-made screens may be inserted between desks.

The Tan-Sad Chair Co. (1931) Ltd. STÁND No. 19

Scientifically-designed posture seating for every grade of office worker, and for factory use, make up this company's exhibits. On show for the first time are two office chairs: the V.33 and V.44.

The V.33 gives complete posture support. Adjustable for height and backrest position, it has a foamrubber cushioned seat; is made without arms to give complete freedom of movement. The backrest of the V.44 general-purposes office chair, though

give added comfort; the seat is generously-sized.

Typical of the executive seating range is the V.26-a luxuriouslycushioned chair with well-padded arms. The 'torsion bar action' backrest adjusts automatically as the user moves. The chair revolves and is adjustable for height; its frame is finished in stove enamel in a choice of colours, and there is a wide range of upholstery patterns.

Industrial seating includes: swingbracket models for use where floorspace is limited; a general-purpose non-adjustable chair designed to minimise the effect of vibration; and an all-adjustable seat.

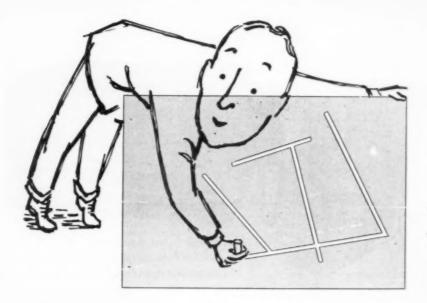
Waddie & Co. Ltd. STAND No. 30

This company specializes in finely printed letterheads, and in other office stationery for a wide variety of requirements. Among the specimens on show are distinctively designed letterheaded business writing paper with flimsy copy sheets attached to make up a set; and specially printed airmail letter forms designed to reduce the cost of overseas mailing.

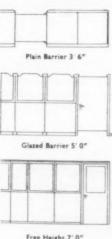
For machine accounting, there is a wide variety of forms, precisionprinted and ruled, for use with all the principal makers' models.



Tan-Sad's V.33 has a foam-rubber cushioned seat and is adjustable for height and backrest position. It is one of a series of scientificallydesigned posture chairs



...but inner space problems baffled us!



is ing dyled ckser is İS ice ige ng-OFose to nd

ely

ner of ens ed er

to ed

to

s a n-

he

S

Free Height 7' 0"



While others discussed outer space, we argued about inner space and the problems of accommodating our staff comfortably in it. Until we read the booklet* about Rubery Owen Steel Partitioning . . . the perfect solution! Now we all have separate offices, all with maximum daylight, all quickly erected and capable of easy re-arrangement . . . now we have

*That booklet could solve your problems, too, as it tells you all about Rubery Owen Steel Office Partitioning. You would like a copy—please write for one.

RUBERY OWEN

STEEL PARTITIONING

Standard panels 24, 30 or 36 ins. wide easily erected to suit available area. Single skin or double skin (sound insulated) construction. Single or double glazing. Single or double doors. Enquiry hatches and ventilators also to suit.

RUBERY OWEN & CO. LTD., Metal Equipment Division, WHITEGATE FACTORY, WREXHAM, N. WALES
Tel. Wrexham 3566-8

Territory Offices: LONDON . BIRMINGHAM . COVENTRY . MANCHESTER . BRISTOL . NEWCASTLE . GLASGOW Member of the Owen Organisation

MID-SEPTEMBER, 1958



In these days of high labour costs, it is even more essential that employers obtain the fullest possible return from highly paid staff. Key personnel should be kept as much as possible at their desks-you pay them for working and not walking. The answer of course is

ntercommunication

and that means Reliance. These time-approved Intercommunication Telephone Systems are pre-eminent in their field, are available from 3 lines and on a most advantageous Rental Service saving capital outlay and providing free maintenance. You get something really worthwhile when you

Link up with RELIANCE



(A Subsidiary of the General Electric Company Limited)

43-47 PARKER STREET, KINGSWAY, LONDON, W.C.2. Telephone: CHAncery 5341 (P.B.X.) Branches throughout the United Kingdom

INTERNAL TELEPHONES . STAFF LOCATION . MUSIC FOR INDUSTRY

Intercommunication

These are new

Dictation recorder, Automaster loudspeaker, one-sheet directory holder $(\textbf{C}ommunication \ \textbf{Systems}) \dots \textbf{Push-button phone-less intercom} \ (\textbf{E.M.I.}) \dots \\ Centrum \ \textbf{loudspeaking systems} \ (\textbf{London Office Machines}) \dots \textbf{Transistorized}$ loudspeaker (Modern Telephones) . . . Redesigned executive station (Reliance) . . . Intermatic system (Siemens) . . . Redesigned instruments and masters (Telephone Rentals)

Communication Systems Ltd. STAND No. 95

Highlight of this display is the recently introduced Automaster, a loudspeaker executive set for use with internal telephone systems. Housed in a polished walnut cabinet, it is claimed to have an extremely high standard of performance.

Up to 20 extensions can be called direct by pressing the appropriate keys. Even if the required extension is engaged at the time, the call is put through automatically when the line becomes free. Other extensions are reached by dialling; and it is possible to dial out another number while a key-called extension is holding on.

Sound from key-called extensions normally goes through the loudspeaker, but when privacy is required these calls may be taken through the handset. More than one Automaster station can be installed on the telephone system.

nects the user with a central tape recording unit through a regular not, therefore, congest the lines.

Other equipment includes a working model of a 25-line PAX and a selection of instruments for use in the system; a staff location system; and public address equipment.

Dictograph Telephones Ltd. 6 STAND No. 48

from two to 66 stations, all with key-calling facilities and loudspeakmay be incorporated into Dictograph internal communication sys- which indicates automatically if all tems. A recent instrument is transistorized.

Also on show are Dictomatic automatic telephone systems for large or small networks. Ancillary facilities include audible staff location, time control systems, synchronized clock systems and time recorders.

E.M.I. Sales & Service Ltd. STAND No. 5

Widely used for some years in Scandinavia, the Ring-Master internal communication system is introduced here for the first time. Claimed to be five times as fast as a conventional system, it dispenses altogether with dial telephones, replacing these with very small flat loudspeaker instruments which are operated by push-button.

The system may contain from 2 to 999 extensions, which are connected Also new is the Telephone Dicta- through a PAX in the ordinary way. tion Recorder, a system which con- Communication is established by light pressure on the appropriate buttons to correspond with the telephone. The system does not use extension number required. A timethe normal PAX circuits and does saving factor is the lamp system.

E.M.I.'s Ringmaster

channels are engaged and saves originating a call at all. If a called extension is engaged, a lamp shows this. Called extensions have an audio and a light indicator.

Normally all stations are loudspeaking. If, however, confidential listening is required, a handset can be fitted on the standard unit. When this is used, the loudspeaker automatically cuts out.

There are many other useful features. Conference, visual paging, and loudhailer facilities can be incorporated into the system.

London Office Machines STAND No. 76

No telephones at all are used in Centrum intercom systems, communication being entirely by push-button and loudspeaker. All sets in the system are powered by a single central power unit and amplifier.

On the Simplex system, master stations are made for six, 14 and 22 stations. These may be connected to other masters or sub-stations without call-back facilities. Calling is by buzzer and lamp.

A variation of this system-the Duplex - incorporates electronic switching. No manual switching from 'Talk' to 'Listen' is required, this function being done automatically. In situations where an unusually high volume of sound is required, the electronic circuit may be switched out at will and a manual system used.

For larger organizations there is the Centrum Celefon, which links each individual in the system to any other and may contain from 30 to several hundred stations. Each station may have direct calling to 30 lines; other stations are reached by use of a row of buttons numbered from 0 to 9—e.g. pressure on the 1 and 8 buttons calls extension 18. Alternatively, stations may be fitted with numbered buttons only.

Modern Telephones (Great Britain) Ltd. • STAND No. 107

Publicly exhibited for the first time, the *Transistocom* is (as its name implies) a transistorized internal communication system. The minimal installation may consist of a master and only one sub-station—a useful arrangement for boss-secretary, office-workshop, restaurant-kitchen, and similar communica-



Modern Telephones' Transistocom

tions. Sub-stations are provided with anti-eavesdropping switches so that the master cannot listen in.

the master cannot 'eavesdrop' on them.

In larger systems, the *Transistocom* master may be connected to several telephones which call the master or one another by push-buttons. These may be powered by lightweight batteries or connected to A.C. mains (with a rectifier unit).

Also new is the *Dialmaster*, a loudspeaker station for use on automatic telephone systems. It incorporates a separate A.C. mains-operated amplifier, mounted fairly close to the desk unit.

The Speakerphone system has press-button telephones, all of which can communicate with one another. In addition, some instruments may be fitted with loudspeakers.

The company are also demonstrating automatic telephone installations of all sizes, and attendant facilities such as fire alarm, time control and public address systems.

Reliance Telephone Co. Ltd. • STAND No. 73

Two recent additions to the many instruments available for internal communication systems are the 1000 telephone and the Reliance PAX-master executive loudspeaker set. The telephone is a handset-type of streamlined design and incorporates the latest transmission techniques. It is made in a variety of attractive colours.

The PAXmaster is described as "a de-luxe set designed to provide the busy executive with all the facilities he needs to ensure a maximum saving of time and effort to himself and his staff." Housed in a good-looking desk cabinet in a choice of finishes, it contains a supersensitive loud-speaker and microphone.

Direct access calling enables the user to contact up to 20 extensions by throwing the appropriate key.

Optional priority is another feature of the *PAXmaster*. This allows an executive to reach a key-called number even when the line is engaged. Conference facilities are also available.

The company are demonstrating press-button and loudspeaking intercom. systems for organizations of every size. On show too are public address systems; staff location on a visual or audible basis; and manually or automatically controlled fire alarm systems.

Siemens Edison Swan Ltd.

A very wide range of instruments is available for use in the private automatic exchanges and branch exchanges supplied by this exhibitor. Among them is the Century Neophone—the first-ever printed-circuit telephone. Small and extremely light in weight, it is streamlined in design and available in a wide range of attractive colours. Special-purpose instruments include a deal-aid model and a silent-call telephone.

Latest of various intercommunication systems to be seen here is the loudspeaking *Intermatic*. An important feature of this is the ease with which incoming calls are identified, each direct line to the master having its own lamp. Masters may have direct key calling up to 10, or up to 20 or more stations, as required, calls being made through the speaker or handset. When included in a PAX



Siemens Centenary Neophone

system, they are also provided with a dial. Side-stations can be connected to 5, 10 or 15 other side-stations.

For smaller organizations there are systems which contain up to a maximum of three loudspeaker masters and 18 side-stations, and operate from dry-cell batteries.

Also on show is a hotel paging unit and public address equipment.

Telephone Rentals Ltd. • STAND No. 56

Internal communication systems of all sizes, including telephones, keycalling loudspeaker units and additional facilities such as staff location, are shown by this company.

The Paxmaster system, for example, can contain any number of automatic telephones and can include executive stations which combine key-calling and dial telephone facilities. Up to 20 departments can be called directly from each master station. Incoming and outgoing speech goes through a loudspeaker, so that the caller need use no handset. If, however, he wants to hear an incoming message privately, he can receive it through the handset. Other extensions are reached by dialling.

Extra facilities can include: priority calling—(the master is able to come through on an engaged line); distinctive ringing tone so that the master calls are immediately recognized by the recipient; secretarial key, used to divert calls to secretary's extension by dialling a single digit.

Smaller in scope, the *Directophone* master station provides direct key-calling only 6, 10, or 16 sub-station telephones, but does not incorporate a dial.

Can you call yourself an E-PLUS* EXECUTIVE?



Question: You have almost clinched a valuable contract with a client. He is about to sign when he sees your quotation and falls into a dead faint.

Should you

ci-

ng

/e

ig o

ļy

d

0

- 1. Rush out to borrow your secretary's smelling salts?
- 2. Hurriedly delete an "O" from the figure in the contract?
- 3. Call up on your intercom the First Aid Team which you have standing by for such emergencies?
- 4. Sign the cheque for him while he is still cold?

Answer 3 gains full marks. You have organising ability and an efficient intercom system. If you haven't the latter, get in touch with Communication Systems Ltd. immediately. They are the acknowledged experts in this field and their quotations have never been known to cause fainting fits.

* E-plus stands for Efficiency Plus. You can only call yourself an E-plus executive if
you can call up any member of your staff without leaving your desk. Otherwise it's
time you called in

STAND 95

AT THE BUSINESS EFFICIENCY EXHIBITION

COMMUNICATION SYSTEMS LIMITED

A member of the Automatic Telephone & Electric group.

Dept. 500, Norfolk House, Norfolk Street, London, W.C.2. Telephone: TEMple Bar 4506

AT2291

"Naturally,
when we thought
of having a computer,
we thought of
Powers-Samas..."

Why not

put your

accounting problems

before

POWERS-SAMAS

leading makers of electronic and

mechanical data processing equipment?

POWERS-SAMAS ACCOUNTING MACHINES (SALES) LIMITED, POWERS-SAMAS HOUSE, HOLBORN BARS, LONDON, E C.1

of data processing equipment, such
as the Powers-Forty, for orthodox punched
card accounting systems with which
can be integrated electronic computer
techniques and high speed output printing.
The Powers-Samas technical advisory
and training services facilitate
the selection of the most

suitable equipment.

CARD PUNCHES, SORTERS, TABULATORS, AND OTHER **EQUIPMENT** • TABULATOR ATTACHMENTS • FORM BURSTERS • STORAGE AND FILING UNITS FOR PLUG BOARDS. CARDS, ETC.

Punched Card Equipment

These are new

Modified tabulator feed for making spirit masters (Fanfold) . . . Redesigned desk reproducer (Powers)

The British Tabulating Machine Co. Ltd. STAND No. 78

Though their exhibit concentrates on the 555 electronic calculator, this company offer literature and advice on the Hollerith range of punched card equipment, which can be used independently or in conjunction with the calculator.

Hollerith machines deal with all kinds of large-scale accounting operations and statistical analysis, calculating and printing being done automatically. Basic equipment is a hand-operated punch; an automatic verifier which checks that correct entries have been made on the cards; high-speed electrical sorters which classify cards under any of the categories in which details have been entered; and a tabulator on which the actual accounting and printing operations are carried out.

Additional items include gang punches, which automatically enter constant items on a series of cards; mark-scanners which 'read' pencil marks and punch cards accordingly; and interpreters which type out visual index lines from punch-marks.

Tabulators are made in several Co-operative Wholesale sizes and capacities, and are set up to individual requirements. Automatic operations include adding, cross-totalling, subtracting, automatic selection and positioning of debit and credit balances.

The large 901 tabulator, for example, is built for maximum flexibility. It embodies 100 counter wheels, each usable as a separate unit, but grouped in twos, fours and eights for convenience. Any groups can be linked to provide any desired digital capacity. The print unit also contains 100 wheels, each with a complete alphabet, 12 numerals and one optional symbol.

Interconnection of the various units is arranged by plugs on a control panel, the latter being changed by the operator according to the job in hand. For frequently repeated tasks, permanently wired panels are kept on hand.



Two machines in the extensive Hollerith range. (Right) the versatile highspeed 901 tabulator; (left) a tape-tocard converter

Society Ltd. STAND No. 108

The Dudley punched card cabinet contains 28 drawers, each of which is subdivided into five sections. It measures 4ft. 6½in. high, 2ft. 1in. wide and 1ft. 71in. deep. Finish is in olive green or metallic grey stove enamel.

Egry Ltd. STAND No. 66

Tabulator forms can be burst apart and trimmed at high speed by the Divi-Burster, described in the Continuous Stationery Section.

Fanfold Ltd. STAND No. 84

A new modification to the Carbaline feed attachment enables spirit duplicator masters to be prepared direct on the tabulator. The Carbaline feeds continuous stationery into the machine but dispenses with interleaved one-time carbon. Carbon is fed in from rolls, and is advanced fractionally at every print cycle of the tabulator. This effects considerable economies. The device can also deliver and sort finished forms.

Production of spirit duplicator masters by this means could save a great deal of hand typing-and the checking that is inevitably required. Copies of statistical documents normally widely circulated could be given to each executive concerned, thus enhancing general efficiency and cutting delays.



O-SEPTEMBER, 1958

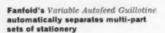
automatically separates multi-part sets of stationery and continuous envelopes into unit sets at a speed of available on IBM punched card about 3,600 per hour. Also on view are the Form Burster for the highspeed separation of perforated forms, and the trimming of sprocket-punched edges; and continuous tabulator Data Processing). forms with interleaved one-time carbons.



The Variable Autofeed Guillotine IBM United Kingdom Ltd. STAND No. 77

Information and literature are accounting machines which, owing to lack of space, are only represented by the 421 tabulator linked to an electronic computer (see Electronic

Described by the company as the 'workhorse' among the tabulators, the versatile 420, is set up to individual specifications, which can vary widely. The machine is particularly suited to the needs of the mediumsized business. Its capacities include cross-addition and subtraction of amounts from individual cards or totals and summary punching of up to three cards on a control change. It has 43 alpha-numerical and 45 numerical type bars, and two 32position storage units. For listing, it can process 80 cards per minute; for tabulating 150 cards per minute.





IBM's 421 tabulator linked to a

Among the very wide selection of other punched card machines, are high-speed sorters, an alphabetical card punch which is operated from an electric typewriter keyboard, and a card reproduction punch which translates pencil marks into punch

Cards, in this case, are marked with a special pencil whose 'lead' has an unusually high graphite content. A mark made with this, therefore, is able to conduct a small, but appreciable amount of electricity. This enables the machinery to 'sense' the marks; an electronic unit then amplifies the small currents, making

PUNCHED CARD AND COMPUTER USERS **EXCELSIOR!**

"Up in the gods" on Gallery Stand No. 93, you will find all that is latest and best in the field of Equipment for the Storage, Pulling and Handling of your Cards and the safe-keeping of your Control Panels and Computer Tape. We are sorry that you have to climb the stairs to see us, but we know your visit will prove well worth while, and a warm welcome will await you!



PUNCHED CARD ACCESSORIES LIMITED

Abbey House, Victoria Street, London, S.W.1 Telephone Numbers ABBey 1396 and 2691

PCA Patent IntaLink/TurnTower Installation for Name-and-Address Cards

them strong enough to actuate the punching unit. This, in turn, produces punched holes corresponding with the original pencil marks.

Jenkins Fidgeon Ltd. STAND No. 95

A number of new items for punched card storage and transportation are mentioned in the Furniture Section.

Lamson Paragon Ltd. STAND No. 46

The speed of punched card accounting can be increased considerably by using this company's machinery.

The Formaliner is a tabulator attachment which feeds pre-printed multi-copy forms through the machiine at varying speeds for each copy. Form movement is controlled by six sprocket pins in a straight line. The top copy (which can incorporate wages envelopes in a pay system), moves through its full depth from one form to the next, the summary copy moves line-by-line so that entries appear normally line-spaced. Both are motivated by the tabulator's printing head, and accurate registration is maintained.

Single-ply continuous forms are broken apart at perforations by the Paragon burster. This machine detaches and stacks the forms at an average speed of 10,000 per hour, and can accept depths from 23in. to 13in. and widths up to 17in. A special model handles forms as large as 17in. by 20in.

Multi-part continuous forms are cut and stacked at speeds of 3,500 sets per hour-and their sprocketpunched margins removed-by the Guillotine model.

Powers-Samas Accounting Machines Ltd. STANDS No. 1 and 91

Lack of space has severely restricted the range of equipment shown. But the exhibits have been chosen to demonstrate how punched card equipment can serve businesses of every size.



A universal key punch, sorter, and tabulator represent the mediumsized Forty range, which uses 40column punched cards. This means that printed material may have a total of 40 numerical and/or alphabetical characters on each line. Other machines employ cards with as

few as 21 or as many as 180 columns.

Information is available on the automatic verifier, used to check hand-punched cards; the summary punch, which collates information from groups of cards; the interpreter. which 'translates' punched information into visible form; and the interpolator, which automatically compares two related packs of cards.

The Samastronic high-speed tabulator-printer is shown printing results at speeds of 42,000 characters per minute-that is, 300 lines each of 140 characters. Information is printed electro-magnetically without metal type. Signals from the machine are fed into fine wire styli which print out results in a series of tiny dots. It is this ingenious development which enables the printing unit to work so

As in other tabulators, decoding and distribution of information 'sensed' from punched cards is carried out by insertion of a plugboard. A number of these can be set up permanently and kept in readiness for routine jobs. They are easily changed by the operator.

Also on show is a representative selection from the numerous items of machine-room storage units and furniture provided by the company's punched address cards, which are room furniture.



(Left) The Powers Samastromic high speed tabulator-output printer with a speed of 360 lines per minute. (Above) The redesigned desk reproducer which copies perforations from a master card and reproduces them on detail cards

filed in tiers so that the typed headings are immediately identifiable.

Sorting racks in various patterns are designed to be used in conjunction with the high-speed sorting machines. A number of cabinets are designed to accommodate cards in the minimum space. There is also a wide selection of chairs, some designed especially for machine operators, others for general office use.

Punched Card Accessories Ltd. STAND No. 93

Ingeniously designed storage units for punched cards and tabulator accessories are available in a number of patterns and capacities.

An example is the Vertical punched card file, which stores groups of 30 or more cards. These may be pulled simultaneously; or the top card may be automatically fed by a simple mechanism. Each unit accommodates up to 31 groups in a height of only 251 in. The groups are visibly indexed by self-adhesive tabs.

The Multifile, made in several capacities, is basically a metal box in which groups of punched cards are displayed in tiers, one behind the other on an upward slope like the seats in an auditorium. Within the main file, cards are kept in removable metal pockets.

Other units include tray-shaped files arranged like multiple-row card indexes; multi-drawer cabinets and Supplies Branch. Among the most sorter racks; plug-board storage recent of these is a visible index for units; lockers and other machine-

GESTETNER



Whatever you sell—from nuclear reactors to nursery requisites—
Gestetner enables you to sell more, sell quicker and more profitably.
Whatever your sales drive needs—from a few highly technical folders to a nation-wide direct mail shot—Gestetner enables you to produce all your own material—as you want it, when you want it, at a fraction of the printer's costs... Gestetner takes the lot in its moneymaking stride!

Your money-making Gestetner also specialises in saving money by producing all your internal stationery. Invoices, statements, stock analyses, wages and bonus sheets, job cards... at any time, in any quantity, quickly and economically. At a word from you we will deliver a Gestetner for a trial run in your own office. No expense. No time limit. No obligation whatsoever.

Free Trial Offer

Gestetner

GESTETNER HOUSE, 210 EUSTON ROAL

I am interested in your Free Trial Offer

NAME

COMPANY

ADDRESS

STENCIL, SPIRIT AND OFFSET LITHO DUPLICATORS . TRANSFER, DIRECT POSITIVE, DYELINE AND OTHER PHOTOCOPYING EQUIPMENT . MICROFILM EQUIPMENT . OVERPRINTING MACHINES

Reproduction Equipment

These are new

Selective spirit duplicator, master erasing fluid (Block and Anderson) . . Automatic dyeline photocopier (Copycat) . . . Tickopres VM overprinter (Dapag) . Photocopier, spirit duplicators (A. B. Dick) . . . ER 2 stencil duplicator, spirit duplicator, dry process duplicator (Ellams) . . . Non-smear transfer sheets (Fordigraph) . . . Offset duplicator (Gestetner) . . . Brief-size and book copiers (Minnesota) . . . Selective spirit duplicators (O.E.D.) Three spirit, two stencil, duplicators (Oliver) . . . Large-size XeroX copier (Rank) . . . Desk-top photocopier printers (Remington)

A. B. Dick & Co. of Gt. Britain Ltd. STAND No. 90

Carbons used with the Azograph rotary spirit duplicators have the unique property of being colourless. This means cleaner work for the typist. No colour appears on master copies until spirit is applied to them a small 'systems' model, the 50. by the machine. Up to 70 copies can be made by this method; for longer runs of up to 200, conventional hecto carbon is employed.

There are three Azograph duplicators. The 226 is a table-top electric machine, with automatic fluid feed, which takes copies up to 11\in. by 14in. in size. Very similar in scope is the 225, which is operated by a foot control. A third model is manually-operated.

The 112 Photocopy is a dualpurpose machine, primarily designed for the transfer process, although it can also be used for dyeline work.

Addressograph-Multigraph Ltd. STAND No. 16

An important feature on this stand is the demonstration of how 'systems' jobs-order processing etc.can be done on the Multilith 1250 offset litho duplicator. Key to the efficient organization of the work lies in the automatic controls of the machine, and a specially-designed paper master document.

Automatic controls make changing from one form and/or master to another quick and easy; in addition, the machine accepts varying weights per or card without adjustment

of the machine or feed. The Systemat duplicator masters. Other accespaper master provides for the production of printed forms and typed or written data in a single operation, straight from blank paper. Material can be added, deleted or substituted at any stage.

Other offset litho machines include

Block & Anderson Ltd. STAND No. 80

An improved method of doing order processing and other 'systems' work is provided by the new Bandamatic spirit duplicator. This versatile electric machine has a selection device which permits any chosen lines from the master copy to be reproduced consecutively at equally spaced intervals. In addition, any vertical column on the master can be omitted from any copy by application of a masking device.

Other rotary spirit duplicators are the 170 SYMM, also for 'systems' applications; the smaller electric 90 ES; and the hand-operated 90 HAF. A new fluid called MastEraze enables corrections to be made on sheet documents. Bulmer's (Calculators) Ltd. STAND No. 14 Used chiefly as a producer of offset litho and other duplicator

sories are checking folders, for

easier handling of masters, and mas-

Three photocopying machines all

use the transfer process. The one-

piece Book Twin copies bound books

or single sheets; the Bandavelop Twin and Junior Twin are one-piece rotary

machines for the copying of single-

ter filing pockets.

master copies, the Justowriter is an automatic tape-operated composing machine. It consists of two parts, the composer and reproducer, both of which somewhat resemble an electric typewriter with an attachment for handling punched tape.

The machine automatically produces 'justified' copy-i.e. with aligned right-hand margins. The operator first types out the copy in the ordinary way on the recorder unit. Towards the end of each line, a red light comes on as a signal that the justifying key should be pressed. This action records the justifying instruction on the punched tape which is being automatically produced as the operator works, and also operates the carriage-return of the machine.

Tape produced in this way is fed into the reproducer unit, which automatically types out the justified version at high speed.

Another exhibit is the Bulmer 50, a low-priced rotary stencil dupli-



The Bandamatic

Copycat Ltd. • STAND No. 62

This range of photocopying equipment for reproduction by the transfer, auto-positive and dyeline processes includes hand-operated and electric models for every type of

Dyeline copying for office 'systems' work is more automated than ever before by the new Systematic Mark II. The equipment works by push-button, producing copies at speeds of 15 to 20 per minute. A feature unique in photocopiers is the line-selection device.

A recent addition to the dyeline range is the AS.14. This high-speed model has automatic separation of print and master, reducing the operator's task to feeding the machine.

Among the one-piece rotary machines for transfer copying (opaque documents of every kind) is the Economist, a low-priced electric model.

Dapag (1943) Ltd. • STAND No. 27

Printing or overprinting of small tickets, labels and containers of all ing machines exhibited on this stand.

Printing of items like trademarks is done with metal plates and rubber stereos. For numerical details, quickchange marking wheels are employed. Other items are set up in standard letterpress type of various sizes.

Among the latest models is the electric Tickopres (Imprima) VM. which makes 6,000 impressions an hour, and handles labels, small bags and collapsible containers from 14in. square up to about 61in. by 51in. Small labels, tickets and tags on reels



Ellams' E.R.2

kinds is done by the rotary overprint- are printed at speeds of 160 per minute on the A3M; there is a manual version of the same machine which can easily be converted to electric operation if required.

Ellams Duplicator Co. Ltd. STAND No. 99

This company's stencil duplicators range from hand-operated flatbed models for the smaller user, to highspeed rotary electric machines. A new feature of some of the larger models is a copy-controlled inking system, which automatically regulates ink distribution over the entire printing surface and gives up to 10,000 good copies at one inking.

Fifty copies or more can be produced by the new Merlin Cub dry process flatbed duplicator. Master copies are made on paper with a special carbon, and copies are taken by pressing sensitized paper over the impression with a 'squeegee'.

A wide range of sundries and accessories includes special-purpose typewriter ribbons; carbon paper; and stencil duplicator supplies of all kinds, including a stencil painting

See the famous

0-fax "copying machines

demonstrated on Stand

at the

BUSINESS EFFICIENCY EXHIBITION

MANCHESTER



This is a wonderful opportunity to see the Thermo-Fax 'Secretary' and Thermo-Fax 'Fourteen' in action, side by side. These are the machines that are releasing the personnel of well-known and progressive companies from laborious mechanical copying and saving management many pounds every year into the bargain. There is probably no reason why they should not do the same for you.

MORE-ISH

The more successful you are the more invoices you will need.

The more invoices you need the more use you can make of Rotaprint.

The more use you make of Rotaprint the more successful you will be.

That's why more enterprising people are buying more Rotaprint machines.



This is the R.70 small offset printing machine. It costs £445. It is compact, simple to operate and fast. It will cover every duplicating requirement and will also produce all kinds of printed work, from simple office forms, to illustrated sales literature. It will pay for itself in a very short time.

Rotaprint

_	-	_	_	_	_	 _

HS3

ENQUIRY FORM

Please mail me full details of Rotaprint machines together with up-to-date specimens of their work.

NAMI

DEPARTMENT

Pin this Enquiry Form to your letterheading and post to ROTAPRINT LTD 'HONEYPOT LANE' LONDON N.W.9

ROTAPRINT LIMITED - ROTAPRINT HOUSE - QUEENSBURY N.W.9 Colindale 8822 (12 lines)

89

outfit. Also on view are an eightsection collator; and the new Hector -a small rotary spirit duplicator

Fordigraph Ltd. • STAND Nos. 100 and 101

Newest model in the Fordigraph range of spirit duplicators is the Bambi, a small hand-operated machine, modestly priced. It makes copies up to foolscap size on almost any type of paper or card. Fluid for the machine is contained in a polythene cartridge to save pouring.

Another machine in the series is the electric-powered 60XAF. With hand-feed, this makes copies up to 48in. by 161in.; with auto-feed, up to 16tin. by 17in., at speeds of 60 copies per minute. The 100 model is a portable with feed and stacking trays which fold up to make a neat carrying case.

The Colourgraph is a flatbed gelatine copier for which masters are made in aniline ink. The jelly cleans itself within 24 hours after use, eliminating any sponging.

A new hecto carbon for use on Fordigraph duplicators has a nonsoluble dye. Typing is therefore a cleaner business, since no colour is transferred to the skin through the natural moisture of the hands.

George Anson & Co. Ltd. STAND No. 43

Transfer process photocopying equipment of several sizes and two types is available in the Copyfix series. The Combi combines exposure and printing units under a single cover; it is power-operated and available with 9in, or 14in, feed width. Any single-sheet opaque document can be copied in about one minute.

Bound volumes or periodicals can be copied without mutilation by a twopiece Copyfix equipment, which also accepts single sheets. Light-boxes are made in two sizes with working areas of 101in. by 131in. and 131in. by 17in. respectively. Hand-operated rotary developer units are made with two feed widths.

Dyeline copying, used for transparent and translucent documents, can be done by the Meto-Rapid. The equipment can be used continuously and will produce finished work at stencil.



Gestetner's high-speed office Gestelith duplicator (left) is an offset litho machine

Minnesota Mining's Thermo-Fax (right) produces facsimiles of written or printed matter



speeds of about 3½ft. per minute. Dry developing is done by ammonia gas. The one-piece unit can be used on a small table.

Gestetner Ltd. STAND No. 18

This company enters the offset litho field for the first time with the Gestelith high-speed office duplicator. Outstanding features include: simplicity of operation; extremely accurate registration; an ink roller assembly which can quickly be removed and exchanged for a spare. The last two characteristics are particularly useful for colour work. Other practical features are micrometer adjustment for paper feed angle. which obviates the need for slewing a plate if the image has been placed on it crookedly; and interchangeable holders designed for straight-edge, oval or pinbar plates.

The range of hand-operated and electric stencil duplicators in various sizes include the 260C with interleaver-an attachment which automatically interleaves copies with reusable cards at the rate of 100 per minute to prevent set off. The machine accepts a wide range of paper weights and incorporates a control which prevents even the thinnest paper from clinging to the

Minnesota Mining and Manufacturing Co. Ltd. STAND No. 38

Copying machines in the Thermo-Fax range produce same-size facsimiles of originals which are typewritten, printed, or handwritten in lead pencil or metallic-based inks. Copying is done by a heat process on specially processed paper. No chemicals, photographic negatives or darkroom are required and copying is fast and simple.

Smallest machine in the range is the desk model Secretary, which makes copies up to foolscap size. Two recent additions are the Fourteen (brief size) and the Premier, which will copy from bound books.

Copying paper is available in four different colours.

Office Equipment Distributors (B.T.L.) Ltd. STAND No. 61

Spirit duplicators in the Orlid and Piccolo series range from small portable models to large and elaborate machines for systems work.

Newest exhibit in the latter category is the Orlid AVX-a lineselecting model at an unusually low price. The machine accepts masters of up to 49 typewritten lines; can print any single line or block of line along with the heading, in a single run. Selections are made with two



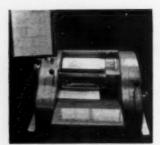
Whether you are a small or large business, starting from scratch or reorganising, you will find Roneo's long experience in equipping offices can be of great help to you. Roneo can supply everything for the efficient running of an office—duplicators, addressing machines, desks, filing systems, visible recording and indexing methods, charting, partitioning etc.—and their advice in every way is available to you for the asking.

at a reasonable cost you can make your office run more smoothly if you call and see

RONEO on stand no. 45

at the Business Efficiency Exhibition

City Hall · Manchester · 22nd to 27th September



The Orlid AVX

dials on the front of the machine, the operator setting numbers corresponding with the first and last line of the selected passage, or the same figure on both dials if only one line is chosen.

Also on show is the Orlid Selectronic, which selects non-consecutive lines in any order by an electronic twin-drums, automatic feed, and a device. Selections are made by pushbutton, and the chosen lines appear one below the other with normal spacing on the copy.

Office Machinery Ltd. STAND No. 28

The hand-operated Copyrex spirit operation in spirit models.

duplicator is portable and easy to use. Up to 300 copies may be taken from a single master and reproduced at speeds of up to 75 per minute, it is claimed. A maximum of four colours can be reproduced in a single run from originals which are written, typed or drawn.

Oliver Typewriter Manufacturing Co. Ltd. STAND No. 64

A range of five new duplicators are being shown on this stand, three spirit and two stencil machines. The spirit models M.230 and M.125 have automatic feed and damping; the M.125 model incorporating these functions is portable.

The M.200 stencil machine, has head-adjustment, copy counter and silk screen. The second stencil duplicator a single-drum machine the M.110 operates on an automatic feed, but has semi-automatic inking.

Both the stencil and spirit machines take foolscap sheets, seven colours can be produced at one

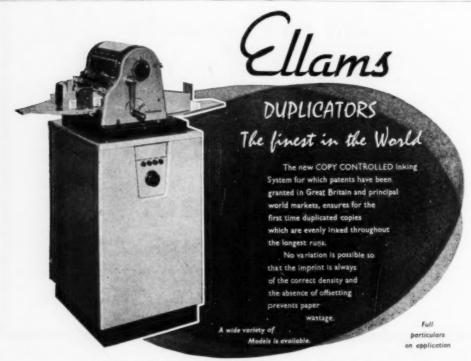
Ozalid Co. Ltd. STAND No. 81

Most important exhibits here are machines for photocopying by the dyeline process-that is, from transparent originals. This method provides a fast and inexpensive means of producing office documents such as invoices, and of copying drawings and plans. The process is entirely

One of the largest units is the Ozamajor, which has a 45in.-wide feed. Exposure and development synchronized at all speeds, and the output varies from 2in. to 15ft. of copied documents per minute. A smaller installation, the Ozaminor, can be stood on a desk top. It handdles originals in cut sheets or continuous rolls up to 14in, wide, and can print and develop about 10ft. per minute.

The Ozarapid C consists of two units and copies by the transfer process (opaque originals). The printer accepts documents up to doublefoolscap size and will also copy from bound books: the developing unit works on the rotary principle.

(Continued on page 92)



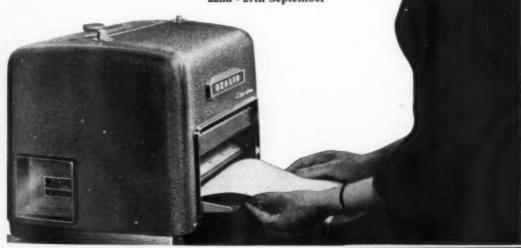
ELLAMS DUPLICATOR CO. LTD., 5 DEAN STREET, LONDON, W.1.

outline of a business system

Taking advantage of an Ozalid business system involves practically no internal reorganisation. Neither is the cost prohibitive. But the results are quite remarkable.

The most up-to-date photocopying technique forms the basis of an Ozalid business system. Statements, Orders, Invoices are typed just once, then Ozalid takes over. An office junior can do the rest. In half the time, at a fraction of the cost and without any checking, the orders, invoices and statements go out.

STAND No. 81 at the B.E.E., Manchester 22nd - 27th September



OZALID BUSINESS SYSTEMS

OZALID CO. LTD., 62 London Wall, London, E.C.2. NATional 0551

Our latest booklet on Statement Production deals fully with a typical Ozalid business system. Please send for a copy. It will show you clearly how much time and money can be saved.

Saves firms thousands yearly. See the new Rank-XeroX equipment at stand 4 City Hall Manchester 22-27 September

Shown for the first time at any exhibition, the remarkable '1318' XeroX equipment makes perfect duplicating masters of all your large format paperwork-engineering drawings. financial documents, maps, charts, forms, plans, technical manuals etc. High quality multiple copies are made in minutes-more economically than ever before. Used with ordinary engineering cameras, the '1318' XeroX produces positive full-scale enlargements on an offset master or on plain paper from drawings and records reduced on film.

Size can be enlarged or reduced. by using a variable ratio camera, for standardising document dimensions, easy handling and impressively great economy.

Also on view will be the standard equipment which produces offset plates up to A.4 or foolscap size.

On stand 4 you will see the most efficient and economical means of duplication there is.

RANK - XEROX LTD

Photostat Ltd. STAND No. 75

A useful feature of Verifax office copying equipment is that it can make at least three facsimile copies from the same matrix in a total time of less than one minute. After the original document has been exposed with a sheet of matrix paper, the latter is placed in an activating solution for about 20 seconds. (Both functions are automatically timed.) Finally matrix and a sheet of copy paper are withdrawn through rollers which transfer the image and squeeze out the moisture, and the two are separated. Subsequent copies are made by repeating the second half of the process. The whole equipment is contained in a small desk-top cabinet.

The Duostat printer, made in three sizes, copies documents by the autopositive process.

Rank XeroX Ltd. STAND No. 4

From a Xero X plate, offset-litho masters can be made quickly and cheaply; alternatively, several plain paper copies can be taken. The xerographic process is entirely dry and is based on electro-static action. An image of the original is projected on to a pre-charged plate, and this is coated with powdered ink which adheres electrically to the picture area. Heat transfers the image to paper or an offset plate, the entire process taking about three minutes.

Newest equipment on show is known as 1318 because of the maximum size copy it can make measures 13in. by 18in. Designed for use with an ordinary offset-litho projector or process unit, it comprises four pieces: plate charging unit, developing tray (in which the charged image is coated with ink), transfer unit and heat fuser.

Remington Rand Ltd. STAND Nos. 6 and 103

atility is the keynote of the Dyflex desk printer, latest addition to a very wide range of photocopying equipment. The unit can employ four processes-reflex, dyeline, transfer and direct copy-and has a double-foolscap printing area. It is manufacturer's numerous processing units.

Another new item is the doublepriced general purpose unit, also for multi-colour work.

suitable for use with processors

In the making of lists, directories, and other fast-changing records the Flexoprint system cuts labour and costs. Copy is typed direct on to precision-cut cards which are slid. after proof-reading, on to channels on a light metal plate. The finished panel can be reproduced by offsetlitho or xerography.

In the duplicator field, the company are showing an automatic electric stencil machine and an electronic stencil cutter.

Roneo Ltd. • STAND No. 45

The Electro-Spray attachment for the 750 electric stencil duplicator. eliminates the problem of set-off which usually occurs when highspeed work is done. Synchronized with the action of the duplicator. it sprays a fine compound on to each copy as it emerges, forming a barrier which prevents transference of ink.

Features of the 750 itself include precision registration, automatic inking and simplicity of operation. The machine is widely adjustable for speed: permits very quick colour changes; can be adjusted to accommodate stencils which have been made out of true. Finished work is stacked neatly, and the machine automatically stops when a predetermined number of copies has been made.

Other exhibits include portable and office duplicators and an electronic stencil-cutter. The electronic machine scans copy with a photoelectric eye and transmits every detail of the picture or drawing to a stencil. The process takes only a few minutes and is entirely automatic.

Rotaprint Ltd. STAND No. 15

Three offset-litho duplicators on this stand are all intended for office use. Smallest is the compact R.70. which has a foolscap-size printing area and accepts paper from 131in. by 9in. down to 41in. by 60 in. Copies are made in any single colour at speeds of up to 4,000 per hour, on almost any kind of paper, and from line, halftone or typed originals. designed for use with any of the The machine has an automatic damping system, and is automatically friction-fed.

The larger R 40/80 has hair-line foolscap desk photo-printer-a low-registration, and is therefore suitable

SHARP CLEAR COPIES STRAIGHT FROM THE ORIGINAL thousands if needed . . . in minutes!



graphy for use on an offset litho machine at one fifth the cost of photographic plate making. This means that much more work can now be handled quickly and efficiently by your own internal duplicating department. Think how much

this will save you in cost and in time! XeroX equipment can also produce up to 6 copies directly-a very convenient additional facility-and it will enlarge and reduce too.

Xerography is clean, requires no dark room, no sensitized materials—and no skilled operator. You would be well advised to see how XeroX equipment can cut duplicating costs in your business right away.

Please ask your secretary to attach this coupon to your letterhead.

XEROGRAPHY

perfects offset duplicating



K-XEROX LTD

Agents and representatives throughout the world

My Company is interested in how it can cut office printing, copying and duplicating costs through the new process of zerography. Further details please.

BEE/58

MID-SEPTEMBER, 1958

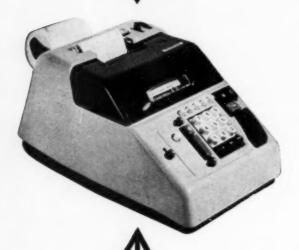
The new olivetti

Elettrosumma 22

the fastest

adding/listing machine

yet produced



With a speed of over 200 cycles per minute the Olivetti Elettrosumma 22 is the fastest adding/listing machine yet produced. Entirely new in design, the Elettrosumma is an easy-to-operate machine which does not require any specialist training. It has the simplified 'streamlined' keyboard which allows figures to be entered (without the mental effort of selecting columns) in the same order as when written by hand. The printed record provides a permanent check on the accuracy of the calculation.

Write or phone to Olivetti for full particulars

British Olivetti Ltd

30 Berkeley Square, London, W1 Telephone: GROsvenor 6161 CAPACITY Entering: £9,999,999 : 19 : 111

or £99,999,999 : 19 : 11

Totalling: £999,999,999 : 19 : 111

WORKS IN STERLING OR WHOLE NUMBERS
MULTIPLICATION BY RAPID REPEAT ADDITION

There is no other machine combining all these special features at any price - £89.15.0

Stand No. 65 Business Efficiency Exhibition, Manchester

Typewriters

These are new

Graphika with proportional spacing (British Olivetti)... Rheinmetall electric (Broughton)... Luxury and Zipper lightweight portables (O.E. Distributors)... Consort semi-portables (Oliver)... SGE electric (Olympia)... Spirityper with hectographic ribbon (T.S.)... Touchmaster standard (Underwood)

British Olivetti Ltd. • STAND No. 65

Prominent on this stand is the *Graphika*, first manual typewriter with proportional spacing. This method allocates to each letter a space appropriate to its size, as in letterpress printing, thereby enhancing the appearance of the work.

Another feature of this machine is its adjustable spacing, by which six different letter-to-letter spacings can be obtained with one stroke on the space bar.

Among the other machines on show is the Lexikon Elettrica, an all-electric machine which is available with 14in., 18in. or 27in. carriage. A standard office machine is the Lexikon 80, which may be had with five different carriage lengths and a variety of type faces. Very light is the Lettera 22, a portable typewriter, available in blue, green or grey finish. Baby of the family is the Studio 44, light enough for the traveller, yet suitable for office use.

Broughton & Co. (Bristol) Ltd. • STAND No. 68

Typewriters for every general office purpose are included in the Germanmade *Rheinmetall* range. There is an electric machine, exhibited for the first time this year, two standard models, and a portable.

For the GSE electric machine there are interchangeable carriages, 17in. and 11in. long. The occasional user of a long carriage could therefore purchase this item as a spare. An unusual feature is the position of the



Rheinmetall GSE electric

decimal tabulator keys, which are placed in a line in the front of the machine. These ten keys are designed to ease the production of accounting documents by providing pre-set stops. The machine has an automatic shut-off which operates after the machine is unused for 30 seconds.

Standard office typewriters are also made with interchangeable carriages. The GS11 has a 12½in. carriage; is equipped with a quick-action paper feed; and, like its electric counterpart, has a 10-key tabulator or, as an alternative, an ordinary tabulator bar.

The KST is a portable with standard features.

IBM United Kingdom Ltd. • STAND No. 77

All typewriters on this stand are electric. Aristocrat of the collection is the *Executive*, a machine which has, in addition to all the normal electric typewriter features, proportional type spacing.

of a long carriage could therefore purchase this item as a spare. An unusual feature is the position of the ish medium weight; Documentary—

slightly darker; Bold face, large and black; and the very thin 12-point Scoretarial

Also on show are a standard electric machine and the *Hektowriter*. The latter, though primarily designed for preparation of spirit duplicator masters, can be used for ordinary work. Overall savings over standard carbon sheets are estimated as high as 70 per cent, because the 350-foot carbon ribbon is only used when typing actually takes place and not one inch of wastage occurs.

Imperial Typewriter Co. Ltd. • STAND No. 2

A wide range of special-purpose typewriters includes the 161, which accommodates a roll-holder for such single-copy material as telephone message forms and lab ls. It has a rapid-feed device for positioning forms, and a knife-edge bail bar for easy separation.

Machines in the *Due l-Feed* series are designed for typing and summarizing of cheques, receipts and similar documents, which are fed continuously. Another machine is intended solely for making out address stencil cards. There is also a typewriter with a hectographic carbon ribbon for making spirit duplicator masters, and a braille machine.

The *Dual-Unit*, designed chiefly for scientific and mathematical formulae, comprises two type units built side by side and sharing a carriage.

Newest among the standard machines is the 66, with 92-character keyboard, page-end indicator, built-in keyset tabulator and quick-set margin device. An acetate ribbon for use with this model produces exceptionally clear-cut results. The Good Companion portable is also on show.

Office Equipment Distributors (B.T.L.) Ltd. STAND No. 61

Among the Swiss-built Hermes typewriters is a new version of the Ambassador standard machine, which carries both a fabric and a carbon paper ribbon. Ingeniously designed. the machine accommodates separate reels for each ribbon, changeover from one to the other being made merely by moving a switch. The whole mechanism is neatly enclosed in the machine's front plate.

Exhibited publicly for the first time is the Smith-Corona portable electric, weighing less than 20lb. The same maker's standard electric model is also on show.

Extreme smallness and lightness of weight are the special virtues of the British-made Empire series of portables. There are two models with clip-on metal cases; the Zipper with a pale green finish and beige-coloured zipper case; and the new Luxury.

Oliver Typewriter Manufacturing Co. Ltd. STAND No. 64

All this company's machines, with the exception of the Courier portable, have recently been redesigned. In line with the modern trend towards 'in-between' machines are the four Consort models. These are not as large or heavy as a standard typewriter and are therefore easier to move from place to place.

The four Consort machines include models with 10in, and 13in, carriages. Special features include an automatic tabulator clearing device; 1, 11 and 2 line spacing; extra-long transparent paper guides to make copy insertion easier: horizontal and vertical lineguides and transparent card-holders.

The standard Oliver is available with 10in., 12in., 15in. or 18in. carriage.

Although very light in weight, the Courier portable has a full 88character keyboard.

Olympia Business Machines Co. Ltd.

STAND No. 40

SGE electric. No details are avail- standard model.



Olympia SGE electric model

able at the time of writing, but the manufacturers say that the machine embodies all the latest developments.

Also on show is the full range of manual typewriters, which includes standard machines and medium and lightweight portables.

A feature of the SGI standard machine is its interchangeable carriage. These are available in 10in., 12in., 13in., 15in., 18in., 24in. and 35in. lengths. Other features include variable touch control; four-position ribbon indicator for maximum economy of a single-colour ribbon; automatic feed lever.

Included in the range of portables are machines with keyset tabulators and varying carriage lengths.

A useful accessory is the hecto-On show for the first time is the graphic ribbon attachment for the

WORLD'S NO I TYPEWRITER

A ROYAL FOURSOME!

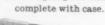
In the renowned Royal range there's a machine

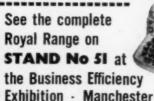
for every person . . . every purpose. Most prized is the Royal Electric, with its exclusive features, smoothness and speed.

Biggest selling model is the Royal Standardwith its many unique time-saving features. The Royal

Diana, versatile as many larger machines, is suitable for light office duties, business trips and in the home. Finally there is the new Royalite Portable, a superb

lightweight model weighing less than 10 lbs.





36 Worship Street, London, E.C.2

'Phone: MONarch 4020 (12 lines)

The Royal

The new Rayalite

Portable



The whole is more than the sum of the parts. That's particularly true of IBM's large-scale computers which are made up of a lot of individual units connected, or 'hooked up', into one large system. And because further units can be added as the need arises. the system is extremely flexible and able to grow as the job grows. Now two of IBM's best known punched card machines have been 'hooked up'the 421 Accounting Machine and the 604 Electronic Calculator, Result? Computer performance at punched card prices. See the demonstration on our stand and you'll see what we mean. Till then, here are a few facts and figures about the 421/604:

READS 150 punched cards a minute CALCULATES ELECTRONICALLY-40,000 additions a minute, for instance PRINTS 150 lines of answers a minute PUNCHES 100 cards a minute

APR-AUTOMATIC LINK BETWEEN SHOP FLOOR AND OFFICE

Here's the IBM answer to a real production headache: how to get prompt and reliable data from production centres to accounting and control departments. The AUTOMATIC PRODUCTION RECORDING system, or APR, collects and correlates production variables at source; stores and summarizes the data at the APR nerve

centre where the whole operation is programmed; and finally records the information in any of 3 forms punched cards, punched paper tape, or automatically typed reports.

You could say that APR 'hooks up' shop floor and office. It will be in action at the B.E.E.





SEE THE BIGGEST RANGE OF ELECTRIC TYPEWRITERS IN BRITAIN

> Come to the B.E.E and discover for yourself why 5 typists on IBMs do the same amount of work as 6 on manual typewriters. In addition to the 'STANDARD'. models on display include the 'EXECUTIVE', the 'proportional spacing' electric that makes typing look like fine printing, the 'FORMSWRITER' for continuous stationery applications, and the 'HEKTOWRITER' which does all your hectographic work without the use of wasteful and messy sheets of hectographic carbon paper. All these are tried and tested machines made by the only company in the world to have sold over 1,000,000 electric typewriters! See us at the B.E.E. 22-27 September on Stand 77.

IBM UNITED KINGDOM LIMITED Queens House, Queen Street, Manchester 2. Telephone: DEAnsgate 8404

Head Office: 101 Wigmore Street, London W.1. Telephone: WELbeck 6600

Data Processing

Electric Typewriters

International Time Recorders

Remington Rand Ltd. STAND Nos. 6 and 103

The Remington range of typewriters consists of electric, standard, and front-feed machines, and a number of portable models.

Features of the electric model include a manifold dial control, by which impression depth is changed according to the number of copies to be typed, and a four-position ribbon indicator.

Royal-McBee STAND No. 51

Well suited to the requirements of air travellers is the super lightweight Royalite portable typewriter, which is only 3in. high and weighs only 8lb. In spite of its small size, the machine has a standard-size keyboard.

The Diana standard-weight portable is as strong and serviceable as an office machine. Among other features, it has keyboard-operated tabulator and automatic margin-setting device. A slightly heavier model, the Administrator, has a 12in. carriage.

Quiet performance is a special feature of the standard machine in the range, the casing being lined with

noise - deadening polythene. This made with three carriage lengths: model too has a device for quick automatic margin-setting. Another useful feature is a page-end indicator. Carriage lengths range from 11in. to

Royal electric typewriters, made with a veriety of carriage lengths, have carbon and fabric ribbon.

T.S. (Office Equipment) Ltd. STAND No. 37

Useful features of the Adler Universal standard typewriter are an adjustable paper injector which, at one pull, feeds paper into a correct writing position; and quick-action automatic margin set devices.

Another interesting Adler manual model has an automatic margin justification device. Easy to use, it involves one rough and one finished typing to produce straight right-

hand edges.

Designed for typing spirit dupliribbon. This method has been found considerably more economical than using sheet carbon, as every inch of able machines, and an electric typethe ribbon is used. The machine is writer.

12in., 18in. and 26in.

Also on show is the Adler Electric.

Underwood Business Machines Ltd. STAND No. 54

Of special interest is the Touch-Master, a standard typewriter with. it is claimed, the lightest touch ever achieved on a non-electric machine.

The machine has several other features which help to speed up work. The ribbon change is extra easy: there is a dual scale in front for automatic centring of headings; to get well-balanced right and left margins. there are coloured indicators on which margin stops are set to get lines 4in., 5in., 6in., or 7in. in length. Standard line - spacing is single, double, triple and half-line; for irregular spacing not covered by these the typist merely presses a button and turns the platen to the cator masters is the Adler Spirityper, required spot; release of the button which takes a 325ft, hecto carbon automatically re-engages the spacing mechanism.

Also shown: standard and port-

CARBON PAPERS

Duracote and Tenacia Reinforced Backs Twincote Reinforced Margins W.B. Pencil Reinforced Backs

INKED RIBBONS

Pure Silk First Grade Special and Durable Standard Quality



Kolok Carbons and Ribbons, including the new METACIA typewriter carbon paper, are available from all leading stationers and dealers.



KOLOK MANUFACTURING CO. LTD., ROCHESTER WORKS, TARIFF ROAD, TOTTENHAM. LONDON, N.17 Tel: TOTtenham 3315 Cables: Kolok, London

On **Stands 6 & 103**

Manchester

Business Efficiency

Exhibition



see how

Remington Rand

EQUIPS BUSINESS FOR PROSPERITY

Here you will not only be able to examine the world's most comprehensive range of modern office equipment. You will be able to discuss just how Remington Rand could equip your business for prosperity. Many organisations—large and small—are streamlining themselves to a new pitch of efficiency by calling in Remington Rand, whose knowledge and experience is based on resources that combine skills and techniques gathered from all over the world. This expert knowledge and experience is at your disposal—without cost or obligation.

so be sure to visit **Stands 6 & 103 BEE** City Hall Manchester 22-27 September

Remington Rand Limited, 24/26 Lever Street, Manchester, 1. Tel: Central 8111/6 1-19 New Oxford Street, London, W.C.1

Still typing cheques and receipts the old-fashioned way?

What your office needs is the Imperial 106 Special Purpose Typewriter with a dual-feed. Cheques and receipts (singly or in strips) are fed in from the front; the summary, fed in from the back, remains in position and gives a concise, detailed record.

The Imperial 106 is a standard typewriter when

The Imperial 106 is a standard typewriter wanted, without change of carriage.



The Imperial 106 is one of a wide range of special purpose typewriters designed to deal with a great variety of office problems. The best way to find out which equipment solves your problem is to talk it over with your local Imperial Agent.

Imperial

Special Purpose Typewriters
On Stand No. F2.

Imperial Typewriter Co Ltd Leicester and Hull

BUSINESS.

ADVERTISERS IN THIS ISSUE

Abbott Bros. (Southall) • 64	Jones, Percy (Twinlock Ltd. 54
Addressall Machine Co. • 26	
Addressing Machines Hayward Ltd. • • 28	
Addressograph Multigraph Ltd. 29	Kodak Ltd. • • • 62
Adrema Ltd. • • • 2	Kolok Manufacturing Co. Ltd 98
AGA Dictating Machine Co. Ltd 49	
Ambidex Equipment Ltd 30	Lamson Paragon, Ltd. • . 39
Art Metal Construction Co. 59	Leabank Office Equipment
Assman Dictating Systems Ltd 61	Ltd 71
	London Office Machines Ltd. 35
Block & Anderson Ltd. 21, 45	
British Olivetti Ltd 94	Magneta Time Co. Ltd. + 42
British Tabulating Machine	Minnesota Mining & Manu- facturing Co. Ltd. • • 86
Co. Ltd. • • • 5 Broughton & Co. (Bristol)	facturing Co. Ltd. • 86 Monroe Calculating Machine
Ltd 24	Co. Ltd. • • • • 41
Bulmer's (Calculators) Ltd. 25, 50	
Burroughs Adding Machine	
Led. • • • 23	National Cash Register Co. Ltd 12
Carson Brothers (Produc-	
tions) Ltd. • • 67	Office Equipment Distribu-
Carter-Davis Ltd. • • 4 Carter-Parratt Ltd. • • 57	tors (B.T.L.) Ltd. • • 22
Cave, C. W. & Co. Ltd · 60	Ozalid Co. Ltd. · · · 91
Chubb & Son's Lock & Safe	
Co. Ltd. • • • 63	
Communications Systems Ltd. 79	Petty & Sons Ltd. • • 38
Comptometer Ltd. (Great Britain) 18	Powers-Samas Accounting Machines Ltd. • • 80
	Punched Card Accessories Ltd. • • • 82
Dacron (Planomatic) Ltd. + 58	
Dare-Inglis Products Ltd. • 9	
Dictaphone Co. Ltd. • 46	Rank-Xerox Ltd • • 92,93
	Reliance Telephone Co. Ltd 76
	Remington Rand Ltd. • • 99
E.M.I. Ltd. (Sales & Services) 53	Roneo Ltd. • • 89
Ellams Duplicator Co. Ltd. 90	tradage inte acce.
Evertaut Seating Ltd 63	ROYal McBee • • 96 RUF Organisation Ltd. • 16
	Rubery Owen & Co. Ltd. • 75
	Aubery Owen a Co. Etc. 1
Fanfold Ltd. • • • 36	
	Shannon Ltd. • • 61
	Stolzenberg Patent File Co.
Gesterner Ltd 84	
	Tan-Sad Chair Co. (1931) Ltd 73
	Telephone Rentals Ltd 8
Hartley Electromotives	e epitone rientary but
Ltd 10, 11	
Harvey, G. A. (London) Ltd. 69	Underwood Business
	Machines Ltd. • • 15
	Universal Postal Frankers
IBM United Kingdom Ltd. 97	Ltd
Imperial Typewriter Co. Ltd 100	
International Coin Counting	William Inmented a s 0
Machine Co. Ltd. • • 32	Wilkes, James Ltd. • • • • • • • • • • • • • • • • • • •

